

Evaluating the Impact of Training on Team Performance: A Study on
Product Specialists in Medical Device Industry in Saudi Arabia

Student name: HUSSAM ABDULKHALIQ SABUR

Student ID: 2021204858

Graduation Project – 2

Faculty of Management - Midocean University

Supervisor

Dr. Mona Moustafa Elashry

Faculty member- Faculty of management- Midocean University

24-Aug-2024 2nd Semester- 2024

Dr. Mona Moustafa Elashry

الصفحة 1 من 32

Acknowledgement and Dedication

I am grateful to Dr.Mona to give us the guides and supports throughout this endeavor to make this dream see the light.

In the spirit of advancing healthcare in Saudi Arabia, this research is dedicated to all product specialists in the medical device industry.

Abstract

The aim of the study: This study aims to reveal the impact of training on team performance in the medical device industry in Saudi Arabia.

The methodology of the study: To achieve the objectives of the study, the researcher used the descriptive analytical approach, where medical device representatives with a number of 300 and the study was applied to 30 medical reps from Smith & Nephew Co, Zimmer, Johnson & Johnson, and Medtronic in the city of Jeddah.

The results of the study: Team training and its dimension training location reached a high level. Team performance and its dimensions training evaluation and teamwork reached a high level.

Theoretical contribution: This study contributes to the literature by investigating the relationship between training and team performance.

Practical applications: The study provides recommendations to the relevant parties in the Medical Device Industry on the importance of applying training and its relationship to team performance, which raises the level of the organization.

Keywords: Team Training, Team Performance, Training Location.

Table of Contents

Acknowledgement and Dedication.....	2
Abstract.....	3
Table of Contents	4
List of Figures.....	6
List of Tables	7
Chapter 1: Introduction	8
Introduction	9
1.1 Research problem	12
1.2 Research Significance	13
1.3 Research Questions	14
1.4 Research Objectives	15
1.5 Research Hypotheses	16
1.6 Research Model	17
1.7 Research Methodology.....	18
1.8 Suggested Project Structure.....	19
1.9 Empirical Study	20
Chapter 2: Literature Review	21
2.1 Introduction	22
2.2 Independent variable (Training)	24
2.3 Dependent Variable (Performance)	26
2.4 The relationship between the research variables.....	27
2.5 Conclusion.....	29
Chapter 3: Methodology	30
3.1 Introduction.....	31
3.2 Operational Definitions for Research Variables.....	31
3.3 Research Design	32
3.4 Research Population and Sampling Methods and Techniques	33
3.5 Sampling Method and Techniques	34
3.6 Data Collection Method	34
3.7 Types of Data	35
3.8 Data Analysis Methods and Procedures	36
3.9 Conclusion	36

Chapter Four: Statistical Analysis of the Study Results	37
4.1 Introduction	38
4.2 Characteristics of the Study Sample	38
4.3 Measuring the Validity and Reliability of Study Instruments	43
4.4 Descriptive Analysis of the Study Variables	48
4.5 Linear Correlation Coefficients between the Study Variables	50
4.6 Results of testing the validity of the study hypotheses	51
4.7 Conclusion	60
Chapter 5: Findings' Discussion and Conclusion	61
5.1 Introduction	62
5.2 Theoretical Contribution	62
5.3 Practical Applications	62
5.4 Recommendations	63
5.5 Study's Limitations	63
5.6 Future Studies	64
5.7 conclusion	64
References	66
Appendix	72

List of Figures

Figure 1: Research Model.....	p. 17
Figure 2: Research Paradigm	p. 18
Figure 3: Training stages according to Arulsamy et al., (2023)	p. 21
Figure 4 : Research Design	P. 34
Figure 5 : What Is Your Gender	P.42
Figure 6 : How Old Are You	P.43
Figure 7 : What Is Your Highest Level Of Educational Achievement	P43
Figure 8 : What Management Position Are You In	P44
Figure 9 : How many staff training courses did you take in the last 12 months	P45

List of Tables

Table 1: Project Structure	P.19
Table 2 : Research Population	P.34
Table 3 : Research Sample	P.35
Table 4 : Independent variable	P.36
Table 5 : Dependent variable	P.36
Table 6 : Description Table of the Study Sample	P.43
Table 7 : Convergent Validity	P.48
Table 8 : Reliability of the Study Tool	P.50
Table 9 : questionnaire answers	P.51
Table 10 : descriptive analysis	P.52
Table 11 : Linear Correlation Coefficients between the Study Variables	P.54
Table 12 : model Results of the Main Hypothesis of the Study	P.56
Table 13 : Results of the First Sub-Hypothesis Test of the Study	P.58
Table 14 : Results of the Second Sub-Hypothesis Test of the Study	P.60
Table 15 : Results of the Third Sub-Hypothesis Test of the Study	P.62

Chapter 1: Introduction

Evaluating the Impact of Training on Team Performance: A Study of Product Specialists in Medical Device Industry in Saudi Arabia

Introduction

Training and development are major requirements for employee success in the medical device industry. This is because big medical device companies aim to market, sell and maintain contracts with medical institutions such as hospitals, polyclinics and governmental contracts. With so much at stake, companies like Smith + Nephew, Stryker and Zimmer BioMed allocate vast budgets for training their sales staff and technical-support specialists. Large medical corporations always aim to improve their work; and they can only do that by having a well-trained and capable staff.

Mahadevan and Yap (2019) highlight that the employees in these corporations “need to put in a lot of effort. Firstly, they will need to understand the product feature and then, to master the selling approach and technique. All of these would be quite impossible without proper training and guideline from their company especially in today’s business environment” (p. 7).

Recent research indicates that sales representatives who have undergone extensive training by their corporations are more capable and knowledgeable than employees without similar training (Mahadevan & Yap, 2019). Such staff members would perform tasks required of them in a more proficient way (Zahiruddin, 2012). They would have the confidence and motivation to achieve their tasks in a timely

manner. They would also be committed to the company's message and strive to perform these tasks with quality and dedication (Mohan & Gomathi, 2015).

In addition, training location is an important factor to be considered when it comes to training and development. Medical device companies need to think whether to offer their training in-house (i.e. on the job training) or in a separate location (i.e. off-the job training). On-the job training is offered within the company walls, and employees would learn how to handle technical machinery from their supervisors/colleagues. On the other hand, off-the-job training requires the company to arrange for external training and development opportunities, usually with specialized consultants and institutes (Mahadevan & Yap, 2019).

There are advantages and disadvantages to both types of training. First, on-the-job training is beneficial for fast knowledge transfer as the staff member would learn and practice as they do the job (Baum & Devine, 2007). Such training is important with task-oriented activities that require handling surgical devices and equipment; as they require certain steps to be followed in a sequence (Blanchard & Thacker, 1998). This type of training is quite beneficial as it saves time and money, but it is not without its disadvantages, as employee's lack of experience may lead to several errors increasing the possibility of accidents (Reddy, 2016). On the other hand, with off-the job training, staff members can focus on learning the required skills with minimal distraction as such training is held in training facilities which would be fully equipped with any required tools and surgical devices (Shafini et al, 2016). In addition, the training program is more structured, as it is delivered by expert trainers and has a clear

agenda. This would lead to greater benefit on part of the trainees (Ramya, 2016). Role play and simulations give the training extra significance. However, as employees require time off work to conduct the training, workload will accumulate and build up. They would have to rush through it decreasing the quality of performance for the sake of finishing what needs to be done (Riley, 2018).

1.1.Research problem:

This study aims to investigate the role of training and development on team performance. It also looks at whether employees prefer their training to be in-house or at specialized training facilities. It looks at how product specialists in the medical device industry in Saudi Arabia view and appreciate the training and development provided for them by the Human Resource Management Department in their corporations and the effect this training has on team performance, and motivation, and dedication.

1.2 Research Significance:

This study will help medical device industry professionals identify the importance of team training and the results this training will have on motivation, performance, and dedication. Also, it will help researchers shed light on the effects of training location on team performance, as it identifies the effect of location on team performance whether it is on-the-job or off-the-job training.

1.3 Research Questions:

This study seeks to answer the following questions:

Main Research Question 1: How does training and development affect team performance in the medical device industry in Saudi Arabia?

Sub-Question 1: How does training and development influence team performance?

Sub-Question 2: How does training and development affect each employee's motivation for success?

Sub-Question 3: How does training and development affect staff dedication to the company?

Main Research Question 2: How does training location affect training success in the medical device industry in Saudi Arabia?

Sub-Question 1: Where do the medical device companies offer their training?

Sub-Question 2: What are the benefits and shortcomings of on-the-job-training?

Sub-Question 3: What are the benefits and shortcomings of off-the-job-training?

1.4 Research Objectives:

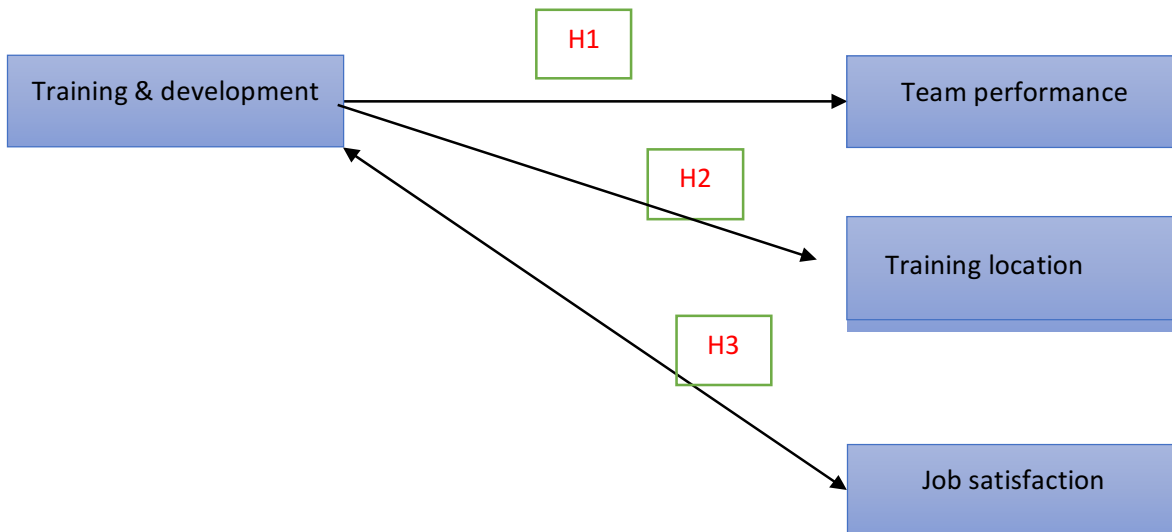
- To examine the effect of training and development on team performance in the medical device industry in Saudi Arabia.
- To explore the type of training offered to employees in the medical device industry.
- To evaluate the effect of training and development on team performance.
- To examine the impact of training and development on employee's motivation for success and dedication to the company.
- To investigate the role of location (on-the-job-training or off-the-job-training) on training success.

1.5 Research Hypotheses:

- H1: There is a statistically significant positive relationship between training evaluation and team training.
- H2: There is a statistically significant positive relationship between team performance and training location.
- H3: There is a statistically significant positive relationship between team training and teamwork.

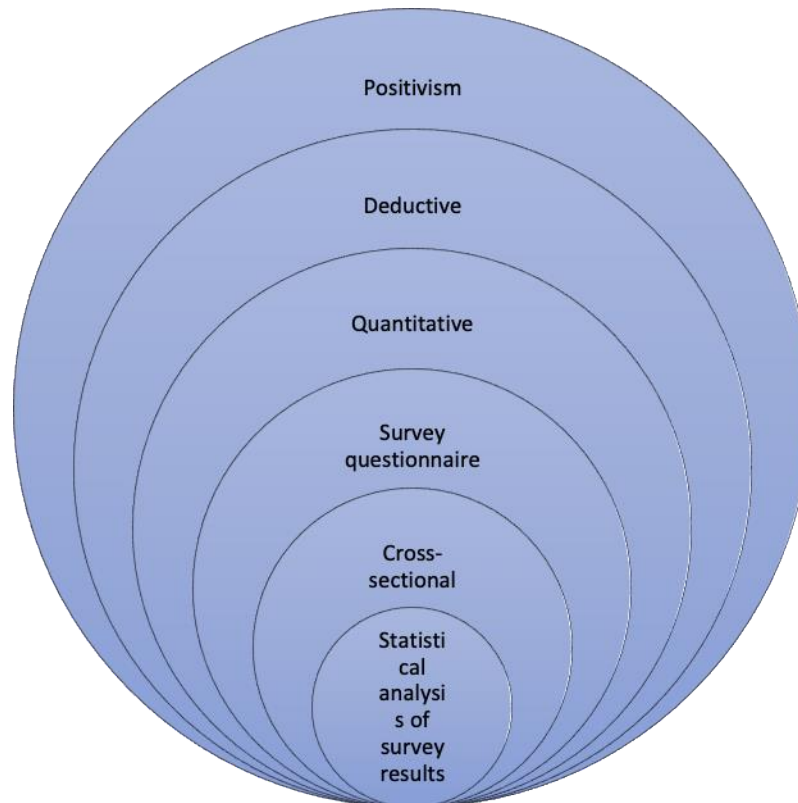
1.6 Research Model:

Figure 1: Research Model



1.7 Research Methodology:

Figure 2: Research Paradigm



Research Philosophy: Positivist

Research Approach: Deductive

Research Strategy: Quantitative

Research Choice: Survey questionnaire

Time Horizon: Cross-sectional

Data Collection and Analysis Techniques: Statistical analysis of survey results

1.8 Suggested Project Structure:

The study will comprise of the following chapters:

Chapter 1:	1.11. Introduction
Chapter 2:	1.12. Literature Review
Chapter 3:	1.13. Research Methodology
Chapter 4:	1.14. Statistical Analysis
Chapter 5:	1.15. Discussion and Conclusion

Table 1: Project Structure

1.9 Empirical Study:

This study will be conducted on 3 international medical device companies which are based in Saudi Arabia: Smith + Nephew, Boston Scientific, Medtronic, Johnson & Johnson and Striker. Over 200 staff members of these companies are expected to participate in the study. An online survey questionnaire will be distributed to them via WhatsApp. The questionnaire is based on the work of Jaseel (2018) Umar et al., (2020), Alzayedat et al., (2017) and Mahadevan and Yap (2019).

Chapter 2: Literature Review

Chapter 2: Literature Review

2.1. Introduction:

Employees are considered as the company's most important asset and, with depending on the company's treatment of its employees, it will either succeed or fail. To ensure the excellent performance of its employee, companies must dedicate budgets to specialized training and development of these employees.

This literature review is divided into three main sections: the first defines the concept of training and highlights its importance. The second section defines performance in terms individual and team performance. The third and final section highlights several research studies which investigate the relationship between the two variables in various job sectors.



Figure 3: Training stages according to Arulsamy et al., (2023)

2.2. Independent variable (Training):

In their meta-analytic look at the impact of team training on performance, Salas et al. (2008) define training as a “a systematic, planned intervention designed to facilitate the acquisition of job-related KSAs” (p. 906). KSAs are the knowledge, skills, and/or attitudinal competencies which are required for the completion of the work. Team training, on the other hand, is described as the tools, methods, [team-based] competencies and training objectives, which form a strategy of instruction (Salas & Cannon-Bowers, 1997). Team training involves “identifying the optimal combination of tools (e.g., team task analysis), delivery methods (e.g., practice based, information based, demonstration based), and content (e.g., knowledge, skills, attitudes) (Salas & Cannon-Bowers, 1997).

Training can only be effective if certain conditions are applied and they are: the trainer, the delivery methods, the location of the training and the training content and objectives (Hafeez & Akbar, 2015). First, the trainer (i.e. the person who is delivering the training) must be capable and efficient in delivering the material at hand. They must also be active communicators who aim to achieve the organizational objectives in an efficient way. Second, the training objectives are the cornerstone of the training program. Every training program must have clear achievable objectives which the trainer then brings to life with their training methods. If the training methods are not suitable for the employees or the setting, then the training will not be as effective (Hafeez & Akbar, 2015).

In their research on workforce training and development in Nigerian companies, Obisi (2011) discuss how important training programs are and state that companies must the assess the quality and results of their training programs constantly. One thing to do is to make sure that the training objectives are met and that the employees end up performing well in their current and future careers.

2.3. Dependent Variable (Performance):

In this study, performance is considered in terms of individual performance and team performance. With regards to individual performance, Afshan et al. (2012, p. 2), define employee performance as; “The achievement of specific tasks measured against predetermined or identified standards of accuracy, completeness, cost and speed. Employee performance can be manifested in improvement in production, easiness in using the new technology and highly motivated workers”. Second, team performance is identified by Salas et al. (2008, p. 906) as “an emergent phenomenon resulting from the goal-directed process whereby members draw from their individual and shared resources to display taskwork processes, teamwork processes, and integrated team-level processes to generate products and provide services”.

Several research studies have been conducted on the importance of employee performance and how it can be improved by specialized training. When the company dedicates special budgets to training, employees acquire and develop several new skills which will greatly improve their task achievement, and will result in a successful company-employee relationship (Hafeez & Akbar, 2015). In addition, the study conducted by Acton and Golden (2003) on training Irish software company workers found that, in a survey of 200 employees training correlates highly with the expectations of the workforce. If the training program is efficient, the employees would be satisfied and confident in their job skills.

2.4. The relationship between the research variables:

Several studies have investigated the relationship between employee training and team performance. For example, Hafeez and Akbar (2015) have worked on the impact of training on performance in the pharmaceutical device sector. They collected questionnaires from 356 employees from four pharmaceutical companies in Karachi and found a positive correlation between training and performance. They also found that employees who received extensive controlled training improved their teamwork, communication skills, costumer service, job satisfaction, among others. Hafeez and Akbar emphasize the importance of designing excellent training programs with clear objectives and stress the need for dedicating special budgets for training programs to improve organizational performance.

In addition, Mahadevan and Yap (2019) investigated the influence of two types of training on employee performance: on-the job training and off-the job training. As mentioned in the introduction, on-the job training occurs within company walls while off-the job training happens in a dedicated training center with the employee taking time off from work to attend the training. The authors distributed 124 questionnaires to employees of direct selling companies in Malaysia. While both types of training were found to significantly influence performance, off the job training had a slightly stronger impact than off the job training. Mahadevan and Yap recommend that companies deliver both types of training for better results.

Furthermore, Khan (2012) investigated the relationship between training and motivation on performance of 100 bank employees in Islam Abad, Pakistan.

Quantitative questionnaire results indicate three main results. First, both training and motivation correlated positively with employee performance. Second, the study also found that training can increase motivation of the employees as they feel more confident in their skills to perform the job well. Third, the study found that among other factors affecting performance (e.g. technology, management, work environment, etc.), training ranks as the first and most important factor.

Moreover, Dutt, Zaheer and Salim (2018) examined the effectiveness of sales training in the pharmaceutical sector and looked at how training design, delivery and evaluation affect the employees' job performance of sales employees in Meerut India. Analysis of 75 questionnaires found that over 60% of employees believe that training needs analysis is important before selecting the training topic. Also, majority of respondents reported that training sales programs provided them with the modern management tools to succeed in their careers.

Finally, Umar et al. (2020) explored training effectiveness on team performance by distributing Likert scale questionnaires to 202 police officers in Indonesia. They investigated how training improves soft skills like searching for information, orientation on efficiency, systemic planning, problem solving and persuasive ability which are important for successful job performance. Umar et al. found that effective training has a positive impact on soft skill competence and team performance. Soft skill competence was also found to increase employee creativity.

Conclusion:

In conclusion, this review of the literature looked at three main areas related to this study. First, it defined training as a planned intervention that helps employees acquire skills which help them in achieving their jobs with success and ease. Second, performance was looked at in terms of individual performance and team performance. While both types of performance are important, this study will mainly focus on team performance as the medical device industry mainly works in teams.

In addition, several research studies highlighted the positive relationship between training and team performance in several sectors including pharmaceutical, financial, governmental and information technology sectors, which adds more significance to the role of training on performance in the job. This has major implications on future research as it shows important role of training. It also provides important contributions to the job market as it pushes companies and organizations to dedicate special budgets to training and development.

Finally, and to our knowledge, no studies have been conducted on the effect of training on performance in Saudi Arabian companies especially in the medical device sector.

Chapter 3: Methodology

3.1. Introduction:

This chapter outlines the research methodology employed to investigate the impact of training on team performance of product specialists in the medical device industry in Saudi Arabia. It details the operational definitions for research variables, research design, research population and sampling methods and techniques, data collection methods, types of data, and data analysis methods and procedures.

3.2. Operational Definitions for Research Variables:

In research studies, operational definitions are key in clearly defining the variables being measured. An operational definition describes how a variable will be measured, observed, or manipulated. It helps researchers ensure that their studies are consistent, reliable, and valid. The operational definitions of this study are:

- **The Independent Variable:**

Operational Definition: Training is defined as a planned intervention that helps employees acquire skills which help them in achieving their jobs with success and ease.

- **The Dependent Variable:**

Operational Definition: The following definition is used for team performance: The achievement of specific tasks measured against predetermined or identified standards of accuracy, completeness, cost and speed by a single employee or a group i.e. team.

3.3. Research Design:

Research Philosophy:

Positivist Research

Approach: Deductive

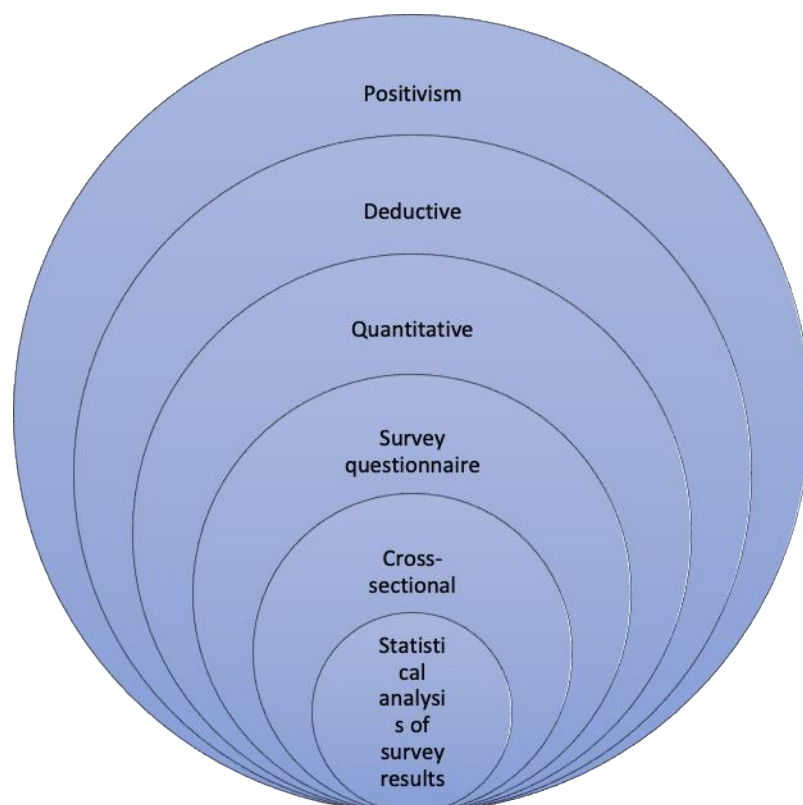
Research Strategy:

Quantitative

Research Choice: Survey questionnaire

Time Horizon: Cross-sectional

Data Collection and Analysis Techniques: Statistical
analysis of survey results



3.4. Research Population and Sampling Methods and Techniques:

- Research Population

Table number (#) Research Population

Sector or company name	Classifications	Number of employees
10 Medical Devise Companies	Top Managers	25
	Staff	275

Research Population By the researcher (2024)
 Table 2 : Research Population

The research uses data from 10 medical devise companies with branches in Saudi Arabia.

The company names are:

1. Smith & Nephew
2. Zimmer
3. Johnson & Johnson
4. Striker
5. Implant Cast
6. Boston Scientific
7. Medtronic
8. Monlekhi
9. Hilliard
10. Lima

- Research Sample

Table number (#) Research Sample

The research sample	Sample size
Target employees in the medical device companies	30 employees

By the researcher (2024)
 Table 3 : Research Sample

3.5. Sampling Method and Techniques:

Because the research tool used is the questionnaire and is considered a quantitative tool, the sampling method is Probability, and the sampling Techniques is Simple Random Sampling.

3.6. Data Collection Method:

The collected data will be analysed statistically. Statistical analysis involves identifying, analysing, and turning raw data into useful information. This approach will help to uncover the key relationships between the Independent variable (training) and the Dependent variable (team performance) at 10 medical device companies in Saudi Arabia. The questionnaire is devised on a Google form and distributed to participants via WhatsApp.

- **The Independent Variable (Training):**

The researcher relied on the questionnaires of Umar, et al. (2020), Jaseel (2018), and Karim, Choudhury and Bin Latif (2019). To measure the independent variable (training), two dimensions were measured: training location and employee motivation for success. Overall, 20 items for the entire variable: within this, the training location consists of 12 elements and the employee motivation dimension consists of 8 elements. Type of instrument is Likert scale questionnaire with 5 options to choose from (Strongly agree, agree, neutral, disagree, strongly disagree).

Table number (#) Independent variable

Variable	Dimension	Number of items	source
Training	Training location	12	Jaseel (2018), Karim, Choudhury & Bin Latif (2019)
	Employee motivation	8	

By the researcher (2024)
Table 4 : Independent variable

- **The Dependent Variable (Team Performance):**

The researcher relied on the questionnaire of Umar, et al. (2020). To measure the dependent variable (team performance), in terms of two dimensions. Overall, 9 items for the entire variable: within this, the training effectiveness consists of 4 elements and teamwork dimension consists of 5 elements. Type of instrument is Likert scale questionnaire with 5 options to choose from (Strongly agree, agree, neutral, disagree, strongly disagree).

Table number (#) Dependent variable

Variable	Dimension	Number of items	source
Team performance	Training effectiveness	4	Umar, et al. (2020)
	Teamwork	5	Umar, et al. (2020)

By the researcher (2024)
Table 5 : Dependent variable

3.7. Types of Data:

- **Primary Data:**

This is data collected from the online questionnaire sent to the participants. We expect about 200 responses from participants.

- **Secondary Data**

This is data collected from official reports produced by the 10 companies investigated in this study.

3.8. Data Analysis Methods and Procedures:

After collecting the data, it is essential to analyse the information gathered to draw meaningful conclusions. As, the Statistical Package for the Social Sciences (SPSS), specifically version 28, were used to analyse the collected data.

The sample profile test was conducted, via descriptive analysis, to gain insights into the characteristics of the sample population. It helps researchers understand the demographics, preferences, and other relevant information about the individuals involved in the study.

Validity and reliability tests are crucial in ensuring that the data collected is accurate and consistent. Validity tests Exploratory factor analysis) to determine if the research instruments measure what they are intended to measure, while reliability tests (Cronbach` Alpha test) assess the consistency of results over time.

The sample profile test was conducted, via descriptive analysis, to gain insights into the characteristics of the sample population. It helps researchers understand the demographics, preferences, and other relevant information about the individuals involved in the study.

3.9. Conclusion:

This chapter discussed the methodology followed in the current study, i.e., questionnaire and the data sampling and methods. The questionnaire analysis will be presented in the following chapter.

Chapter Four:

Statistical Analysis

of the Study Results

4.1. Introduction:

This chapter presents the results of the field study that were statistically analysed using the statistical programs SPSS version 29. The current chapter of statistical analysis includes descriptive statistics for the sample under study using SPSS version 29. Testing the validity and reliability of the questionnaires is also used to collect the required data from the current study sample. To test the research hypotheses and the suitability of the model, simple linear regression analysis was conducted via SPSS 29.

4.2. Characteristics of the Study Sample:

1. Description of Personal Questions for the Study Sample:

The study sample was distributed according to gender, age group, educational level, management position, and number of training courses received. Frequencies and percentages were calculated for the study sample members and are represented by demographic information that includes:

- Gender: (male, female).
- The age group: (below 25, 25-35, 36-45, over 46).
- Educational level: (Diploma, bachelor's degree, master's degree, PhD)
- Management position: (Top level management, mid-level management, team member)
- Number of staff training workshops attended in the last 12 months: (none, 1-5, 6-8, 9-12, more than 12)

2. Description Table of the Study Sample:

Variable	Variable Classes	Number	Percentage of the Total Sample
Gender	Male	28	93.3%
	Female	2	6.7%
	Total		100%
Age Group	Below 25	1	3.3%
	25-35	9	30%
	36-45	18	60%
	over 46	2	6.7%
	Total		100%
Educational Level	Diploma	2	6.7%
	Bachelor's degree	20	66.7%
	Master's degree	6	20%
	PhD	2	6.7%
	Total		100%
Management Position	Top level management	6	20%
	Mid-level management	14	46.7%
	Team member	10	33.3%
	Total		100%
Staff training workshops	None	1	3.3%
	1-5	24	80%

attended in the last 12 months	6-8	3	10%
	9-12	0	0%
	More than 12	2	6.7%
	Total		100%

Table 6 : Description Table of the Study Sample

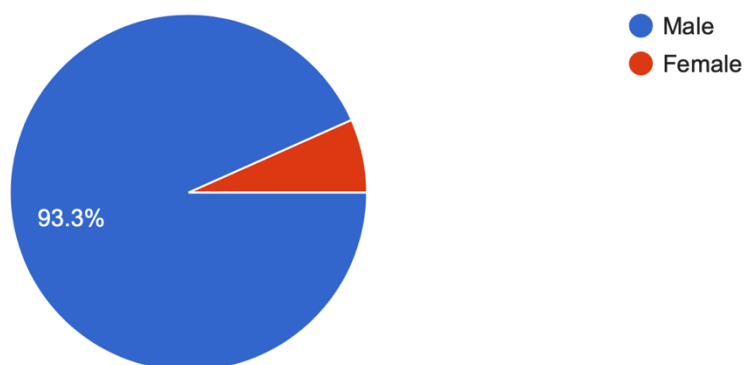
1.. An Illustration of Each Paragraph of the Personal Questions for the Study

Sample:

The first personal question asked respondents if they were male or female. We received 30 responses total with males being 93.3% (28 respondents) and females were 6.7% (2 respondents).

What is your gender?

30 responses



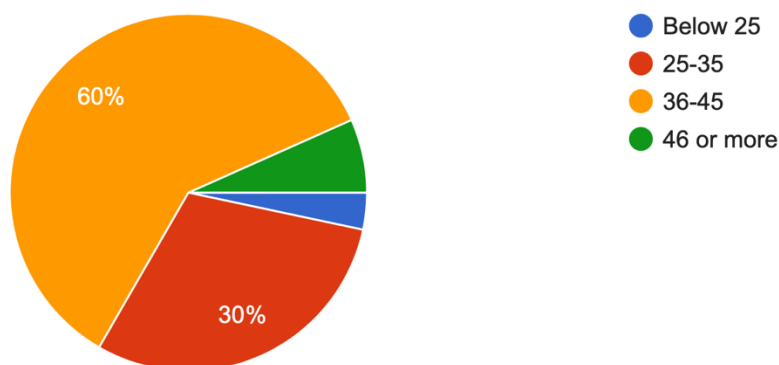
The second personal question asked respondents about their age. We received 30 responses total. Those below 25 years old were 3.3% (1 respondent), those from 25-23 were 30% (9 respondents), 36-45 were 60% (18 respondents), and those over 46 were 6.7% (2 respondents).

Dr. Mona Moustafa Elashry

respondents).

How old are you?

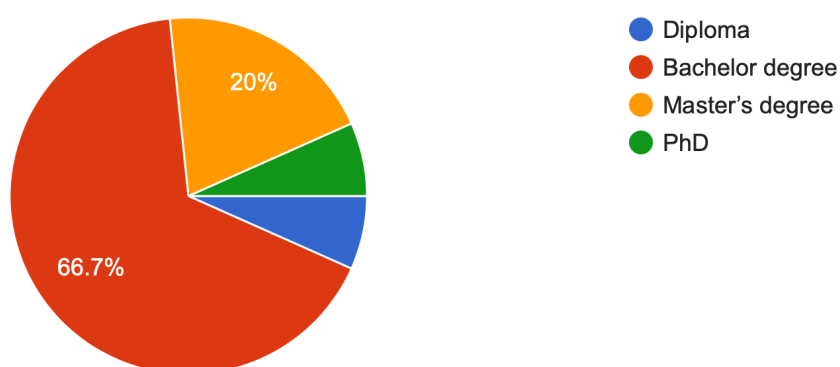
30 responses



The third personal question asked respondents about their educational level. We received 30 responses total. Those who have a diploma were 6.7% (2 respondents), those with a bachelor's degree were 66.7% (20 respondents), those with a master's degree were 20% (6 respondents), and those with a PhD were 6.7% (2 respondents).

What is your highest level of educational achievement?

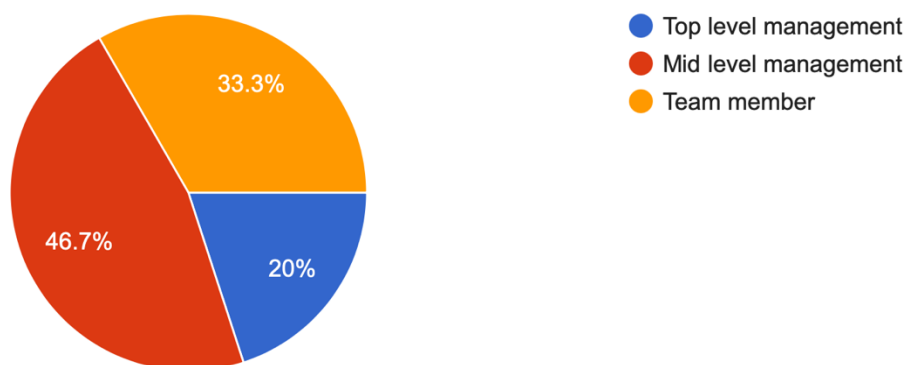
30 responses



The fourth personal question asked respondents about their management level. We received 30 responses total. Those who were top level management were 20% (6 respondents), those who were mid-level management were 46.7% (14 respondents), and those who were team members were 33.3% (10 respondents).

What management position are you in?

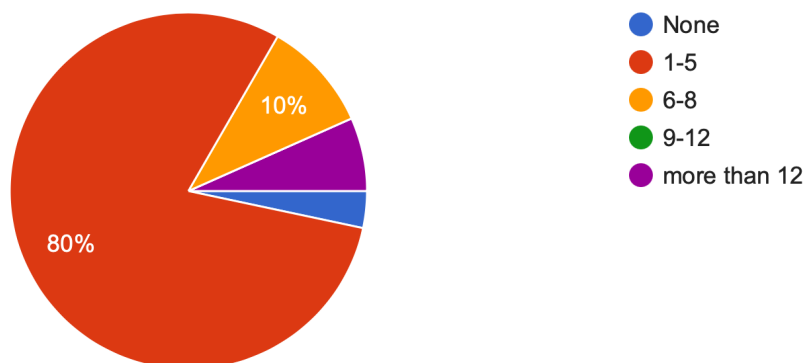
30 responses



The fourth personal question asked respondents about the number of staff training workshops they attended in the last 12 months. We received 30 responses total. Those who received no training were 3.3% (1 respondent), those who received 1-5 training courses were 80% (24 respondents), those who received 6-8 training courses were 10% (3 respondents), those who received 9-12 training courses were 0% (0 respondents), and those who received more than 12 training courses were 6.7% (2 respondents).

How many staff training courses did you take in the last 12 months?

30 responses



4.3 Measuring the Validity and Reliability of Study Instruments:

To verify the validity and reliability of the measures used in the study, the internal consistency validity of the questionnaires used to measure the study variables was tested, in addition to measuring the convergent validity by measuring the Average Variance Extracted (AVE). While the reliability of the measures used in the study was measured by Measuring the value of Cronbach's alpha, through the structural equation modeling (SEM), using the statistical analysis program SPSS version 29. The following paragraphs and tables explain this:

4.3.1 Validity of the Measures Used in the Study:

The internal consistency validity of the scales used to measure the study variables was tested, in addition to measuring the convergent validity by measuring the average variance extracted.

Internal consistency validity: It means the extent to which each statement of the questionnaire is consistent with the variable to which it belongs. Therefore, the researcher measured the internal consistency of the questionnaires by calculating the correlation coefficients between the score of each statement and the total score of the variable to which it belongs. According to Kaiser (1974) study, a correlation coefficient of less than 0.5 is removed from the questionnaire.

Convergent Validity: The average variance between statements that measure the same scale is measured by calculating the average variance extracted (AVE), whose value must be greater than 0.5 according to Hair et al (2006).

The following tables show the statistical results for (correlation coefficients, standard deviation, calculated T value, and P value between the score of each statement and the total score of the variable to measure the validity of the internal consistency of the questionnaires. Also, calculating the value of the average variance extracted (AVE) to measure the convergent validity of the questionnaires through the equation model. Structural SPSS version 29, as follows:

Variable		Statement	KMO	Factor Loadings	P Values (Mean)	Standard Deviation	Average Variance Extracted	
First Variable: Training Evaluation	Dimension 1: Productivity	A1	.847	.814	3.87	.97	3.95	3.74
		A2		.746	3.97	1.09		
		A3		.691	4.03	1.15		
	Dimension 2: Job Satisfaction	A4		.598	3.47	1.33	3.54	
		A5		.826	3.83	.91		
		A6		.772	3.33	.92		
	Dimension 3: Future Career	A7		.622	3.70	1.26	3.73	
		A8		.651	3.77	1.33		

	Growth							
Second Variable: Training Location	Dimension 1: Off-the Job Training	B1	.759	.763	3.67	1.09	3.48	3.53
		B2		.324	2.80	1.09		
		B3		.773	3.67	.88		
		B4		.878	3.80	1.24		
	Dimension 2 On-the Job Training:	B5		.913	3.73	.90	3.78	
		B6		.907	3.63	1.06		
		B7		.659	3.93	1.28		
		B8		.845	3.83	1.23		
	Dimension 3: Location Preference	B9		.536	3.20	1.15	3.34	
		B10		.616	3.67	1.09		
		B11		.702	3.17	.98		
		B12		.737	3.33	1.24		
Third Variable: Team Performance	Dimension 1: Training Effectiveness	C1	.922	.898	3.97	1.15	3.86	3.95
		C2		.765	3.73	1.01		
		C3		.691	3.97	.92		
		C4		.578	3.80	.96		
	Dimension 2: Teamwork	C5		.826	4.20	1.29	4.03	
		C6		.899	4.30	1.14		
		C7		.622	3.93	1.11		
		C8		.689	3.93	1.25		
		C9		.913	3.80	1.03		

Table 7 : Convergent Validity

It is clear from the table above:

The scale of applying the first variable (Training Evaluation): All

correlation coefficients for all statements are strongly correlated with their dependent variable (the variable and its dimensions), at values greater than 0.8. In addition, the values of all correlation coefficients for the statements are statistically significant at a significance level less than 0.001. Accordingly, the internal consistency validity of

the scale has been achieved. Also, from the results above related to the value of the average variance extracted AVE, it is clear that its value for the variable of applying (the variable and its dimensions) is $0.565 > 0.5$. Accordingly, the convergent validity of the questionnaire has been achieved.

The scale of applying the second variable (Training Location): All

correlation coefficients for the statements that measure (the variable and its dimensions) have a value greater than 0.7. In addition, the values of all correlation coefficients for the statements are statistically significant at a significance level less than 0.001. Accordingly, the internal consistency validity of the scale has been achieved in its three dimensions. Also, from the results above related to the value of the average variance extracted AVE for the variable of (the variable and its dimensions) as a whole, which is equal to 0.736, the values of the average variance extracted (for the dimensions of the variable) are: 0.770, 0.0758, respectively. Accordingly, the convergent validity of the questionnaire has been achieved.

The scale of applying the third variable (Team Performance): All

correlation coefficients for the statements that measure (the variable and its dimensions) have a value greater than 0.9. In addition, the values of all correlation coefficients for the statements are statistically significant at a significance level less than 0.0001. Accordingly, the internal consistency validity of the scale has been achieved in its three dimensions. Also, from the results above related to the value of the average variance extracted AVE for the variable of (the variable and its dimensions) as a whole, which is equal to 0.736, the values of the average variance extracted (for the dimensions of the variable) are: 0.770, 0.0758, respectively.

Accordingly, the convergent validity of the questionnaire has been achieved.

4.3.2 Reliability of the Study Tool:

The stability of the questionnaire refers to the stability of the questionnaire results and their non-change significantly if they were redistributed to the sample individuals several times during specific time periods. To measure the stability of the questionnaires used to measure the study variables, Cronbach's alpha values were calculated using SPSS version 29. According to (2010) Hair et al, the value must be greater than 0.7 for the scale to be stable.

Variable		Number of Statements	Cronbach's alpha	
First Variable: Training Evaluation	Dimension 1: Productivity	3	.747	.914
	Dimension 2: Job Satisfaction	3	.913	
	Dimension 3: Future Career Growth	2	.923	
Second Variable: Training Location	Dimension 1: Off-the Job Training	4	.896	.889
	Dimension 2 On-the Job Training:	4	.875	
	Dimension 3: Location Preference	4	.901	
Third Variable: Team Performance	Dimension 1: Training Effectiveness	4	.951	.956
	Dimension 2: Teamwork	5	.960	

Table 8 : Reliability of the Study Tool

First Variable and the dimensions:

The statistical results showed that the values of Cronbach's alpha are (0.747,0.913,0.923), which indicates that all values are greater than 0.7. According to

Hair et al (2010), the stability of the scale has been achieved.

Second Variable and the dimensions:

The statistical results showed that the values of Cronbach's alpha are (0.896,0.875,0.901), which indicates that all values are greater than 0.7. According to Hair et al (2010), the stability of the scale has been achieved.

Third Variable and the dimensions:

The statistical results showed that the values of Cronbach's alpha are (0.951,0.960), which indicates that all values are greater than 0.7. According to Hair et al (2010), the stability of the scale has been achieved.

4.4. Descriptive Analysis of the Study Variables:

The questionnaire answers are five-point scale according to the following table:

Level/degree/practice/importance	Relative weight %	Result (general trend)	The value of the arithmetic mean
Very low	From 20 to less than 36%	Strongly disagree	From 1 to less than 1.80
Low	From 36 to less than 52%	Disagree	From 1.80 to less than 2.60
Middle	From 52 to less than 68%	Neutral	From 2.60 to less than 3.40
High	From 68 to less than 84%	Agree	From 3.40 to less than 4.20
Very high	From 84 to less than 100%	Strongly agree	From 4.20 to less than 5

Table 9 : questionnaire answers

The following table shows the descriptive analysis of the study variables represented by the arithmetic means based on the five-point Likert scale and the standard deviations of the variables according to the table related to the importance of

the arithmetic mean.

Variable		Arithmetic mean		Standard deviation		General trend		Level of importance	
First Variable: Training Evaluation	Dimension 1: Productivity	3.95	3.74	.95	.99	Agree	Agree	High	High
	Dimension 2: Job Satisfaction	3.54		.89		Agree		High	
	Dimension 3: Future Career Growth	3.73		1.14		Agree		High	
Second Variable: Training Location	Dimension 1: Off-the Job Training	3.48	3.53	.84	.83	Agree	Agree	High	High
	Dimension 2 On-the Job Training:	3.78		.99		Agree		High	
	Dimension 3: Location Preference	3.34		.66		Neutral		High	
Third Variable: Team Performance	Dimension 1: Training Effectiveness	3.86	3.94	.92	.96	Agree	Agree	High	High
	Dimension 2: Teamwork	4.03		1.01		Agree		High	

Table 10 : descriptive analysis

According to the table, most of the dimensions and variables have AGREE as a general trend except for Location Preference which received NEUTRAL. The level of importance for all variables is high.

The table above for the arithmetic means and standard deviations of the study variables shows the following:

- The results of describing the variable (training evaluation) show that the general trend of the study sample items is (Agree), which indicates the achievement high training evaluation, as the arithmetic mean of the sample members' opinions was (3.74) with a standard deviation of (.99)
- As for describing the variable (training location), the results showed that the general trend of the study sample items is (Agree). The arithmetic mean of the variable was (3.53) at a standard deviation of (0.83).
- As for describing the variable (team performance), we find that the arithmetic mean of the dimension is (3.94) at a standard deviation of (0.96).

According to the descriptive results of the study variables, the descriptive statistical results regarding the independent variable (team training) indicated that the general trend among the study sample is Agree and that its application in the sector is high, while the descriptive statistical results for the dependent variable (team performance) and its dimensions were at a high level in the medical device industry, from the point of view of the study sample.

4.5. Linear Correlation Coefficients between the Study Variables:

Variable		Productivity	Job Satisfaction	Future Career Growth	Off-the Job Training	On-the Job Training	Location Preference	Training Effectiveness	Teamwork
Productivity	Pearson correlation	1	.83	.67	.78	.85	.52	.85	.80
	Sig (2 tailed)		.001	.001	.001	.001	.003	.001	.001

	N	30	30	30	30	30	30	30	30
Job Satisfact ion	Pearson correlation	.83	1	.75	.77	.75	.52	.75	.75
	Sig (2 tailed)	.001		.001	.001	.001	.003	.001	.001
	N	30	30	30	30	30	30	30	30
Future Career Growth	Pearson correlation	.67	.75	1	.64	.74	.53	.71	.70
	Sig (2 tailed)	.001	.001		.001	.001	.002	.001	.001
	N	30	30	30	30	30	30	30	30
Off-the Job Training	Pearson correlation	.78	.77	.64	1	.85	.53	.83	.73
	Sig (2 tailed)	.001	.001	.001		.001	.002	.001	.001
	N	30	30	30	30	30	30	30	30
On-the Job Training	Pearson correlation	.85	.75	.74	.85	1	.63	.92	.85
	Sig (2 tailed)	.001	.001	.001	.001		.001	.001	.001
	N	30	30	30	30	30	30	30	30
Location Preference	Pearson correlation	.52	.52	.53	.53	.63	1	.57	.59
	Sig (2 tailed)	.003	.003	.002	.002	.001		.001	.001
	N	30	30	30	30	30	30	30	30
Training Effectiveness	Pearson correlation	.85	.75	.71	.83	.92	.57	1	.90
	Sig (2 tailed)	.001	.001	.001	.001	.001	.001		.001
	N	30	30	30	30	30	30	30	30
Teamwork	Pearson correlation	.80	.75	.70	.73	.85	.59	.90	1
	Sig (2 tailed)	.001	.001	.001	.001	.001	.001	.001	
	N	30	30	30	30	30	30	30	30

Table 11 : Linear Correlation Coefficients between the Study Variables

The table above shows that there is a strong positive correlation between the different variables of the study.

4.6. Results of testing the validity of the study hypotheses:

Results of the Main Hypothesis of the Study:

H: There is a statistically significant positive relationship between team training and team performance in the medical device industry in Saudi Arabia.

This main hypothesis has the following sub-hypotheses:

- H1: There is a statistically significant positive relationship between training evaluation and team training.
- H2: There is a statistically significant positive relationship between team performance and training location.
- H3: There is a statistically significant positive relationship between team training and teamwork.

Results of testing the main hypothesis of the study:

This hypothesis states that **“There is a statistically significant positive relationship between team training and the team performance in the medical device industry in Saudi Arabia.”**

To test this hypothesis, the Simple Linear Regression Analysis method was used between the application of team training under study as an independent variable and team performance overall as a dependent variable.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.903 ^a	.815	.808	.41695

a. Predictors: (Constant), Training

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.416	1	21.416	123.188	<.001 ^b
	Residual	4.868	28	.174		
	Total	26.284	29			

a. Dependent Variable: TeamPerformance

b. Predictors: (Constant), Training

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	
1	(Constant)	-.035	.368		.924
	Training	1.103	.099	.903	<.001

a. Dependent Variable: TeamPerformance

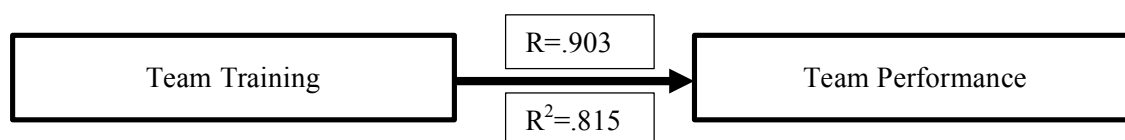


Table 12 : model Results of the Main Hypothesis of the Study

The above tables show the following:

- The significance level of the F test (sig. F) is less than 0.001, which indicates the significance of the simple linear regression model at a significance level of 0.001
- The value of the correlation coefficient ($R = 0.903$) indicates a positive correlation between the application of team training and team performance (overall).
- The adjusted coefficient of determination (R^2) indicates that 65% of the variance in team training (overall) can be explained by the variance in the level of team

performance.

- The value of (T. Value) indicates the significance of the regression coefficient beta (β). The significance level calculated for the (T) test is less than 0.001.

Based on the previous results, the validity of the main hypothesis is *accepted*, which states that there is a statistically significant positive correlation between the application of team training as an independent variable and team performance (in general) as a dependent variable.

Results of the First Sub-Hypothesis Test of the Study:

This hypothesis states that: “There is a statistically significant positive relationship between training evaluation and team training.” This hypothesis tests the direct relationships between the application team training under study as an independent variable, and the function of training evaluation as a dependent variable.

To test this hypothesis, the Simple Linear Regression Analysis method was used.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.955 ^a	.912	.909	.27041

a. Predictors: (Constant), TeamTraining

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.280	1	21.280	291.036	<.001 ^b
	Residual	2.047	28	.073		
	Total	23.328	29			

a. Dependent Variable: TrainingEvaluation

b. Predictors: (Constant), TeamTraining

Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-.236	.239		-.989	.331
	TeamTraining	1.100	.064	.955	17.060	<.001

a. Dependent Variable: TrainingEvaluation

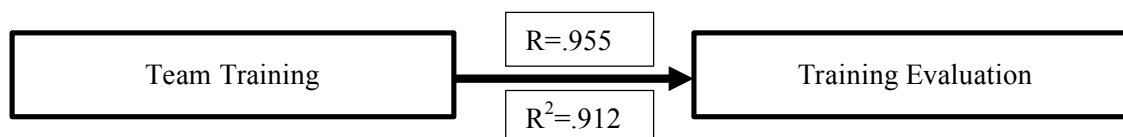


Table 13 : Results of the First Sub-Hypothesis Test of the Study

The above tables show the following:

- The significance level of the F test is sig. F (less than) 0.001 (which indicates the significance of the simple linear regression model at a significance level of 0.001).
- The value of the correlation coefficient ($R = 0.955$) indicates a positive correlation between the application of team training and training evaluation.
- The adjusted coefficient of determination (R^2) indicates that (58.4%) of the variance

in the training evaluation can be explained by the variance in the level of application of team training.

- The value of (T. Value) indicates the significance of the regression coefficient beta (β). The significance level calculated for the (T) test is less than (0.001).

Based on the previous results, the validity of the first sub-hypothesis is accepted, which states that there is a positive correlation with statistical significance between the application of team training as an independent variable and training evaluation as a dependent variable.

Results of the Second Sub-Hypothesis Test of the Study:

This hypothesis states that: “There is a statistically significant positive relationship between team training and training location.” This hypothesis tests the direct relationships between the application team training under study as an independent variable, and the function of training location as a dependent variable.

To test this hypothesis, the Simple Linear Regression Analysis method was used.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.972 ^a	.944	.942	.18027

a. Predictors: (Constant), TeamTraining

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.322	1	15.322	471.478	<.001 ^b
	Residual	.910	28	.032		
	Total	16.232	29			

a. Dependent Variable: TrainingLocation

b. Predictors: (Constant), TeamTraining

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.157	.159		.989	.331
	TeamTraining	.933	.043	.972	21.714	<.001

a. Dependent Variable: TrainingLocation

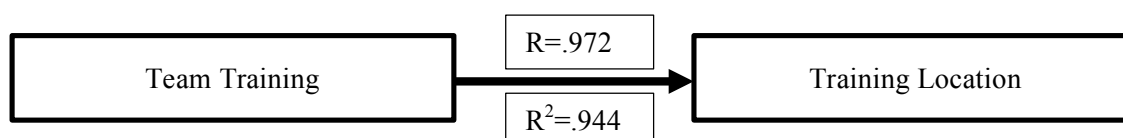


Table 14 : Results of the Second Sub-Hypothesis Test of the Study

The above tables show the following:

- The significance level of the F test is sig. F (less than) 0.001 (which indicates the significance of the simple linear regression model at a significance level of 0.001).
- The value of the correlation coefficient ($R = 0.972$) indicates a positive correlation between the application of team training and training location.

- The adjusted coefficient of determination (R^2) indicates that (55.4%) of the variance in the training location can be explained by the variance in the level of application of team training.
- The value of (T. Value) indicates the significance of the regression coefficient beta (β). The significance level calculated for the (T) test is less than (0.001).

Based on the previous results, the validity of the second sub-hypothesis is accepted, which states that there is a positive correlation with statistical significance between the application of team training as an independent variable and training location as a dependent variable.

Results of the Third Sub-Hypothesis Test of the Study:

This hypothesis states that: “There is a statistically significant positive relationship between team training and job satisfaction.” This hypothesis tests the direct relationships between the application of team training under study as an independent variable, and the function of job satisfaction as a dependent variable.

To test this hypothesis, the Simple Linear Regression Analysis method was used.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.887 ^a	.787	.779	.418359281

a. Predictors: (Constant), TeamTraining

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.096	1	18.096	103.389	<.001 ^b
	Residual	4.901	28	.175		
	Total	22.996	29			

a. Dependent Variable: JobSatisfaction

b. Predictors: (Constant), TeamTraining

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	
1	(Constant)	-.127	.369		.733
	TeamTraining	1.014	.100	.887	10.168

a. Dependent Variable: JobSatisfaction

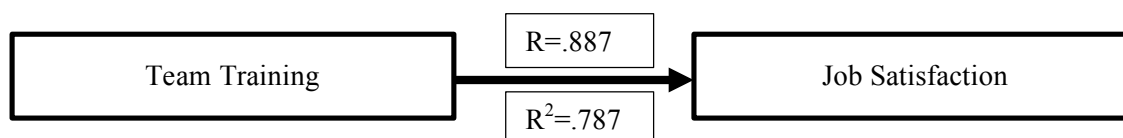


Table 15 : Results of the Third Sub-Hypothesis Test of the Study

The above tables show the following:

- The significance level of the F test is sig. F (less than) 0.001 (which indicates the significance of the simple linear regression model at a significance level of 0.001).
- The value of the correlation coefficient ($R = 0.887$) indicates a positive correlation between the application of team training and training location.
- The adjusted coefficient of determination (R^2) indicates that (59.8%) of the variance in the training location can be explained by the variance in the level of application of

team training.

- The value of (T. Value) indicates the significance of the regression coefficient beta (β). The significance level calculated for the (T) test is less than (0.001).

Based on the previous results, the validity of the third sub-hypothesis is accepted, which states that there is a positive correlation with statistical significance between the application of team training as an independent variable and job satisfaction as a dependent variable.

4.7. Conclusion:

For the statistical analysis of the data of the current study, SPSS V.29 program was used. The researcher conducted a descriptive analysis of the study sample, as well as a descriptive analysis of the study variables. According to the results of the statistical analysis of this study, the validity and reliability of the scales used in measuring the study variables were achieved. Also, the main hypothesis of the study and the three sub-hypotheses were proven.

Chapter 5:

Findings' Discussion

and Conclusion

5.1. Introduction

This chapter deals with the theoretical contribution and practical applications of the study, in addition to the recommendations, study's limitations, future studies, and the conclusion, as follows:

5.2. Theoretical Contribution

The researcher mentioned the method of selecting the research variables as the research variables were not linked in a single research model before, or the number of previous literatures linking the two variables was small and insufficient.

Therefore, the researcher was able through his current study to build the theoretical framework in a way that enhances theoretical knowledge of the study variables and was able to determine the dimensions of the variables and determine the most appropriate methodology to achieve its objectives. The appropriate tool for collecting data from the study sample was questionnaires.

5.3. Practical Applications

The importance of this research lies in its practical application to the Medical Device Industry in Saudi Arabia. The industry can, for example, benefit from the research results in developing training programs and training courses to meet their employees' needs. In addition,

Dr. Mona Moustafa Elashry

the medical device industry can invest in artificial intelligence technology to improve training quality, which contributes to reducing costs and improving product quality. The medical device industry can also establish partnerships with technology startups to adopt the latest technologies.

5.4. Recommendations

In light of the study results, the researcher recommends the following:

- The necessity of raising awareness about the concept of employee training.
- The necessity of encouraging managers to use in-house and outside training courses.
- The necessity of providing more training to new employees so that they are familiar with the job and its requirements.
- The researcher suggests that medical device industry reserve a special budget for training its employees.

5.5. Study's Limitations

5.5.1 Objective Boundaries: The study is limited to stating the reality of management with the first variable team training and its dimension (training location), and the second variable team performance with its dimensions (training evaluation - teamwork).

5.5.2 Human Boundaries: The study is limited to 30 medical device specialists in the medical device industry in Saudi Arabia.

5.5.3 Spatial Boundaries: The study is limited to the geographical scope of the medical device industry in Jeddah, Saudi Arabia.

5.5.4 Temporal Boundaries: The study was conducted within the course of the 2024 academic year.

5.6. Future Studies

Through the results reached by this study, which showed the close relationship between team training and its dimension training location and team performance and its dimensions training evaluation and teamwork, the researcher recommends that others who want to continue studies on the same topics unify these results in work environments and focus on one of the sub-hypotheses and its relationship to the study questions proposed by the researchers.

5.7. Conclusion

This research aimed to investigate the impact of training on team performance within the medical device industry in Saudi Arabia. Through a survey of product specialists, the study collected and analyzed data to understand the relationship between these two variables.

Key Findings:

- **Positive Correlation:** The results revealed a positive correlation between the use of training and improved team performance. This suggests that investing in training programs can significantly enhance the effectiveness and productivity of teams in the medical device industry.

Dr. Mona Moustafa Elashry

- **Training Effectiveness:** The research also highlighted the importance of training effectiveness in driving positive outcomes. Well-designed and executed training programs are more likely to lead to improved team performance than poorly structured ones.
- **Training Location:** While the study did not delve deeply into the impact of training location (on-the-job vs. off-the-job), it provides a foundation for future research to explore this aspect.

Recommendations:

- **Invest in Training:** Based on the findings, companies in the medical device industry should prioritize investing in comprehensive training programs for their teams. This investment can lead to improved performance, increased efficiency, and ultimately, greater success.
 - **Focus on Effectiveness:** Companies should ensure that their training programs are well-designed, relevant, and delivered effectively. This involves careful planning, experienced trainers, and ongoing evaluation to measure the impact of training on team performance.
 - **Explore Training Location:** Future research could delve deeper into the impact of training location on team performance. This could help companies determine the most effective approach for their specific needs and circumstances.
- Summary** This research provides valuable insights into the relationship between training and team performance in the medical device industry. The findings suggest that training is a critical factor in driving positive outcomes for teams. By investing in effective training programs, companies can enhance their teams' performance, productivity, and overall success. Further research on the impact of training location could provide additional valuable information for industry professionals.

References

References

- Acton, Thomas & Golden, Willie. (2003). "Training the knowledge worker: a descriptive study of training practices in Irish software companies", Journal of European Industrial Training, Vol. 27 Iss: 2/3/4, pp.137 – 146).
- Akther, S., Tariq, J., Islam, N. (2019) Measurement of the Effectiveness of Off the-Job Training Methods in Commercial Banks of Bangladesh International Journal of Business and Management. Vol (14) N (9)
- Arulsamy, A. Singh, I. Kumar, S. Panchal, J. Bajaj, K. (2023) “Employee Training and Development Enhancing Employee Performance – A Study”, Vol. 16 Iss: 3, pp. 406 – 416.
- Afshan, Sultana, Sobia Irum, kamran Ahmed & Nasir Mahmood (2012). “Impact of Training on Employee Performance: A Study of Telecommunication Sector in Pakistan”, Interdisciplinary Journal of Contemporary Research in Business, vol 4, no 6, pp. 646-661.
- Alzyadat, M. Abutayeh, B. Abu Jalil, M. Al-Alwan, M. (2017). The Impact Provision of Training Opportunities for Sales and Marketing Personnel has on the Marketing Performance of Telecommunications Companies in Jordan. International Journal of Applied Business and Economic Research. Vol(15).N (19). pp 187-201

- Baum, T. & Devine, F. (2007) Skills and Training in the Hotel Sector: The Case of Front Office Employment in Northern Ireland, *Tourism and Hospitality Research*, 7(1), pp269-28
- Blanchard, P.N, & Thacker, J. W. (1998) Effective Training: Systems, Strategies and Practices *Prentice Hall*, New Jersey.
- Hair, J.F. Jr, Black, W.C., Babin, B.J. and Anderson, R.E. (2010), Multivariate Data Analysis: A Global Perspective, 7th ed., Pearson Prentice Hall, Upper Saddle River, NJÆ
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L., (2006). Multivariate data analysis (Vol. 6).
- Hafeez, U. Akbar, W. (2015). “Impact of Training on Employees Performance” (Evidence from Pharmaceutical Companies in Karachi, Pakistan). Vol (6). N(1). pp 49-64.
- Leighland, C. (2002). The Efficacy Of Pharmaceutical Sales Training- A Case Study Exploration. Pp 98-112
- Mahadevan, A. & Yap, M. (2019). Impact of Training Methods on Employee Performance in a Direct Selling Organization, Malaysia. *IOSR Journal of Business and Management*. Vol (21). N (10). pp 7-14.
- Mohan, K. & Gomathi, S. (2015) The Effects of Job Rotation Practices on Employee Development: An Empirical Study on Nurses in the Hospitals of Vellore District, *Mediterranean Journal of Social Sciences*, 6(1), pp209-215

Jaseel. (2018). Impact Of Training And Development On Employee Retention Of The Sales Team In Vodafone At United Kingdom. pp 1-90.

Kaiser, H.F., (1974). An index of factorial simplicity. Psychometrika, 39(1), pp.31-36

Karim, M. Choudhury, M. Bin Latif, W. (2019). The Impact of Training and Development On Employees' Performance: An Analysis Of Quantitative Data. Noble International Journal of Business and Management Research. Vol (3). No (2). pp 25-33.

Khan, M. (2012). The Impact of Training and Motivation on Performance of

Employees. research journal of the institute of business administration Karachi-Pakistan. Vol (7).

N (2). pp 84-95

Obisi, Chris (2011). "Employee Training and Development in Nigerian Organizations: Some Observations and Agenda for Research", Australian Journal of Business and Management Research Vol.1 No.9 [82- 91].

Ramya (2016) The Effect of Training on Employee Performance *International Journal of Scientific Research and Modern Education (IJSRME)*, 1(1), pp697-706.

Riley, J. (2018) Training - Off-the-job Training [Online] Available at:

<https://www.tutor2u.net/business/reference/training-off-the-job-training>

Dutt, Rajul, R. Zaheer, & Salim, M. (2018). Evaluation Of Sales Training Effectiveness In Pharmaceutical Sector. European Journal of Management and Marketing Studies. Vol (3). N (1). Pp 1-9.

Reddy, C. (2016) Top 11 Advantages and Disadvantages of On-the-job Training [Online]

Available at: <https://content.wisestep.com/advantages-disadvantages-job-training-methods/>

Salas, Eduardo, DiazGranados, Deborah, Klein, Cameron, Burke, Stagl, Kevin (2008).

Does Team Training Improve Team Performance? A Meta-Analysis. Human Factors: The Journal of the Human Factors and Ergonomics Society.(50): 903.

Salas, E., & Cannon-Bowers, J. A. (1997). Methods, tools, and strategies for team

training. In M. A. Quinones & A. Ehrenstein (Eds.), Training for a rapidly changing workplace (pp. 249–279). Washington, DC: American Psychological Association.

Shafini, N., Syamimi, J., Amalina, N.nRapidah, S. & Sakina, H. (2016) Workplace Training: Reinforcing Effective Job Performance, *e-Academia Journal UiTMT*, 5(1), pp1-15 [Online]

Tukunimulongo (2016) Effect of On-The-Job Training on Employee Performance in Kenya: Case of Mumias Sugar Company Limited. *International Journal of Recent Research in Commerce Economics and Management* Vol. 3, Issue 1, pp: (7-24),

Umar, A. Tamsah, H. Mattalatta, M. B. Baharuddin, Abdul Latief, R (2020). Training-Effectiveness and Team-Performance in Public Organization. *Journal of Asian Finance, Economics and Business*. Vol (7). N (11). Pp 1021-1031.

Zahiruddin, A., Said, M. & Latiff, A. (2012) The Impact of Training on Small and Medium Enterprises (SMEs) Performance: *Journal of Professional Management*, 2(1), pp. 15-25.

Appendices

Appendix

Variables of the Study and Questionnaire Items

Independent Variables:

Variable 1: Employee's motivation for success	Variable dimensions	Number of statements	Source
	Productivity	3	Jaseel (2018)
	Job satisfaction	3	Karim, Choudhury & Bin Latif (2019)
	Future career growth	2	

List of questions related to variable 2:

Productivity:

1. The training programs I received increases the quality of my productivity (A1)
2. The training I receive directly improves the results of my current work assignments (A2)
3. Receiving frequent training programs motivates me to improve my skills (A3)

Job Satisfaction:

4. My career growth is based on various training programs that I have attended (A4)
5. Attending several training programs make me feel satisfied with the quality of my work (A5)
6. The training and development I receive leads me to be satisfied with my job (A6)

Future Career Growth:

7. Attending training courses helps with my chances for salary increase (A7)
8. My training and development goals are designed to prepare me for future positions (A8)

Variable 2: Training location	Variable dimensions	Number of statements	Source
	Off-the-job training	4	Akther, Tariq & Islam

	On-the-job training	4	(2019)
	Location preference	4	Tukunimulongo (2016)

List of questions related to variable 2:

Off-the-Job Training:

9. Off-the-job training helped me acquire better knowledge of my field of work (B1)
10. My organization gives adequate importance to off-the-job training (B2)
11. Off-the-job training improves my performance at work (B3)
12. Off-the-job training strongly develops my skills and competence (B4)

On-the-Job Training:

13. On-the-job training provides important job skills (B5)
14. On-the-job training allows me to enjoy my work (B6)
15. On-the-job training raises my team spirit (B7)
16. On-the-job training helps with procedural and technical aspects of my work (B8)

Location Preference:

17. I prefer on-the-job training over off-the-job training (B9)
18. I like my training to be conducted in a separate facility than the office (B10)
19. I worry about missing so much work when I take my training in another facility (B11)
20. I can't focus on the training when it's held at my workplace because of my work duties (B12)

Dependent Variable:

Variable 3:	Variable dimensions	Number of statements	Source
Team performance	Training effectiveness	4	Umar, et al. (2020)
	Teamwork	5	

List of questions related to variable 1:

Training Effectiveness:

- 21. I have additional knowledge after attending the training programs (C1)
- 22. I have more work skills after the training programs (C2)
- 23. I can apply the results of training in my work (C3)
- 24. I can put the effects of the training programs into work (C4)

Teamwork:

- 25. I always try to contribute to teamwork (C5)
- 26. I always try to interact with my teammates (C6)
- 27. I always try to keep the team on track (C7)
- 28. I always work with a team and expect quality work (C8)
- 29. I try to acquire new knowledge and skills that are relevant to teamwork from the training programs (C9)

Table of Research instruments

Introduction:

Dear Respondent,

This letter is an introduction to the main reason as to why your participation in this questionnaire is required

This study is a research study on the thesis title Evaluating the Impact of Training on Team Performance: A Study on Product Specialists in Medical Device Industry in Saudi Arabia. It is in partial fulfillment of one of the requirements for the attainment of the award of the bachelor's degree in Project Management from the Midocean University from where I am currently taking on my studies.

My research project endeavors to generate knowledge to be utilized in understanding training and development of employees. The study specifically focuses on determine how training and development affect employees performance. As a representative of your company, your views are of importance in my study and I would appreciate you responding to this questionnaire. This is purely for academic purpose and your response will be kept confidential and anonymous.

Thank you for your time, co-operation and contribution to my study. I shall be pleased to send you a copy of the findings of the study if you desire so.

Yours faithfully,

Hussam Sabur

- What is your gender?
 Male () Female ()
- How old are you?
 Below 25 () 25-35 () 36-45 () 46 or more ()
- what is your higher level of educational achievement?
 Diploma () Bachelor degree () Master's degree () PhD ()
- What management position are you in?
 Top level management () Mid level management () Team member ()
- How often do you attend staff training funded by your employer?
 Never () rarely () Often () always ()
- How many staff training courses did you take in the last 12 months?
 None () 1-5 () 6-8 () 9-12 () more than 12 ()

	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	The training programs I received increases the quality of my productivity					
2.	The training I receive directly improves the results of my current work assignments					
3.	Receiving frequent training programs motivates me to improve my skills					
4.	My career growth is based on various training programs that I have attended					
5.	Attending several training programs make me feel satisfied with the quality of my work					
6.	The training and development I receive leads me to be satisfied with my job					

7.	Attending training courses helps with my chances for salary increase					
8.	My training and development goals are designed to prepare me for future positions					
9.	Off-the-job training helped me acquire better knowledge of my field of work					
10.	My organization gives adequate importance to off-the-job training					
11.	Off-the-job training improves my performance at work					
12.	Off-the-job training strongly develops my skills and competence					
13.	On-the-job training provides important job skills					
14.	On-the-job training allows me to enjoy my work					
15.	On-the-job training raises my team spirit					
16.	On-the-job training helps with procedural and technical aspects of my work					
17.	I prefer on-the-job training over off-the-job training					
18.	I like my training to be conducted in a separate facility than the office					
19.	I worry about missing so much work when I take my training in another facility					
20.	I can't focus on the training when it's held at my					

	workplace because of my work duties					
21.	I have additional knowledge after attending the training programs					
22.	I have more work skills after the training programs					
23.	I can apply the results of training in my work					
24.	I can put the effects of the training programs into work					
25.	I always try to contribute to teamwork					
26.	I always try to interact with my teammates					
27.	I always try to keep the team on track					
28.	I always work with a team and expect quality work					
29.	I try to acquire new knowledge and skills that are relevant to teamwork from the training programs					

Statistical Analysis Tables

Gender

Q1					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	1	28	93.3	93.3	93.3
	2	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

Age

Q2					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	1	1	3.3	3.3	3.3
	2	9	30.0	30.0	33.3
	3	18	60.0	60.0	93.3
	4	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

Educational level

Q3					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	1	2	6.7	6.7	6.7
	2	20	66.7	66.7	73.3
	3	6	20.0	20.0	93.3
	4	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

Management position

Q4					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	1	6	20.0	20.0	20.0
	2	14	46.7	46.7	66.7
	3	10	33.3	33.3	100.0
	Total	30	100.0	100.0	

Staff training funded by your employer

Q5					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	2	10	33.3	33.3	33.3
	3	10	33.3	33.3	66.7
	4	10	33.3	33.3	100.0
	Total	30	100.0	100.0	

How Many training Courses

Q6					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	1	1	3.3	3.3	3.3
	2	24	80.0	80.0	83.3
	3	3	10.0	10.0	93.3
	5	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

