

The Impact of Training and Information and Communication Technology on Employees Performance: An Empirical Study on Pharmaceutical Manufacturing Companies in Amman

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Abstract

This study aims to measure the impact of Training and Information and Communication Technology on Employees Performance. Two independent variables are defined namely: Training and information and communication technology as well as one dependent variable is defined namely: Employees' performance. The study population is consisted of (15) Pharmaceutical Manufacturing Companies working in Amman. The study used stratified random sample. To collect the primary data a questionnaire survey was distributed to (120) managers. The questionnaire consisted of (32) items of close ended response type. The study used the software package for statistical analysis SPSS (Statistical Package for Social Sciences) for testing the hypotheses through regression analysis. The results showed that training is the most significant where (Beta= 0.271, Sig= 0.008) and it positively and directly regresses on employees performance, followed by information and communication technology where (Beta= 0.254, Sig= 0.012) and it positively and directly regresses on employees performance.

Keywords: Training, Information, Communication Technology, Performance.

Introduction

Information and Communication Technology (ICT) has not only changed the work styles of the organizations but also has considerably increased the efficiency and employees' performance Gupta (2000). The growth of any company, in addition to capital, intelligent human resources and good production techniques, is now highly dependable on the use of Information and communication technology specifically (Morgen, 1998).

Information and communication technology is a branch of computer science, data storing, manipulation and report, printing, recording, transmission, decision-making and presentation in desired form at desired place. These features enable employees' performance (1998).

The anticipation was that increased investment in Information and communication technology would obviously lead to increase in employees' performance. Information and communication technology has made rationalization promising in organizations by minimizing human error. These features of Information and communication technology are called as automation (Zuboff, 1998). Specifically, information and communication technology has been widely used in knowledge work.

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Training plays a role in the economic development and essential part of Human Resource Development (HRD), the review of the literature suggests that the human resource can be advanced through better training (Haq, 2002). Training is necessary tool for improving employees' performance, productivity and adaptability, therefore contributing to improving the overall competitiveness of the organizations' (Cailods, 1994). Therefore, this study aims to investigate the potential impact of training and information and communication technology on employee's performance.

Problem of the Study

In light of the acceleration, progress and technological development; Training and information and communication technology have become an important factor on the development of organizations and as is well known through the management literature and previous related studies that the development of organizations is directly dependent upon the performance of the human element through work quantity, quality, as well as speed of work achievement which reflects on the overall performance in the organization and due to the lack of previous Arabic studies in the sector of pharmaceutical manufacturing companies in Amman, Also some organizations do not want to keep updating technology because they believe saving money is the right way, and of course keep updating technology need to train staff to the new technology, so spending money on the targeted points will lead in the long run to a successful organization, this study seeks to investigate the potential impact of training and information and communication technology on employees' performance [1-56].

Questions of the Study

This study seeks to answer the following questions.

The first main question: Is there an impact of training on employees' performance?

The second main question: Is there an impact of information and communication technology on employees' performance?

Third main question: Is there an impact of training and information and communication technology on employees' performance?

Objectives of the Study

Identify the impact of training on employees' performance, Identify the impact of information and communication technology on employees' performance And Identify the impact of training and information and communication technology on employees' performance.

Importance of the Study

The study acquires its importance in the following: Information and communication technology as well as employees' performance is a recent topic that requires more investigations and research, especially in developing countries. The current study shed lights on the importance of pharmaceutical manufacturing companies which is

one of the integral source of the Jordanian economy, and also because of its prominent role in achieving economic development and provide high quality products that contribute to maintaining health. The current study provide orientation to managers to benefit from information and communication technology as a result, managers are provided help in developing the right information and communication technology system that meet their requirements.

Research Model: In light at the previous literature pointed out by (Abou-Moghli, et. al 2012; Gupta, 2000; McClelland, 2002; Mathis & Jackson 2009) the following model in Figure 1 is presented:

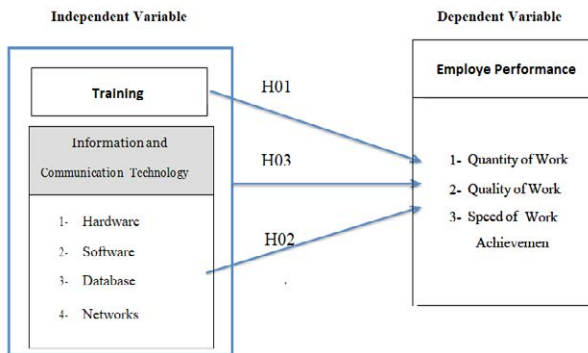


Figure 1

Hypotheses of the Study

In order to reach the study objectives the following hypotheses have been developed as follows:

The first main hypotheses: There is no statistical significant impact of training at the level ($\alpha \leq 0.05$) on employees' performance.

The second main hypothesis: There is no statistical significant impact of information and communication technology at the level ($\alpha \leq 0.05$) on employees' performance.

The Third main Hypothesis: There is no statistical significant impact of training and information and communication technology at the level ($\alpha \leq 0.05$) on employees' performance.

Previous Related Studies

Study (Arvanitis & Loukis, 2008) entitled: "Information and Communication Technologies (ICT), human capital, workplace organization and labor productivity: A comparative study based on firm-level data for Greece and Switzerland". The purpose of this study is to conduct a comparative empirical study of the effect of ICT capital, human capital and new organizational practices on labor productivity in Greek and Swiss firms. They use firm-level data collected in 2005 through a common questionnaire administered to samples of similar composition (e.g. Similar firm sizes, similar sectors), from which they construct econometric models with similar specifications for Greece and Switzerland. The analytical framework is based on a firm level production function. The researchers found statistically significant positive effects for physical capital, ICT capital, human capital and "employee voice"-oriented organizational practices for both samples.

Study (Kalogiannakis, 2008) entitled: "Training with ICT from the Trainees Perspective. A local ICT Teacher Training Experience". The purpose of this study conducted within the framework of national training programmed in Greece on ICT known as "In service teacher training in the use of ICT in Education" are presented. Based on specially constructed questionnaire intended for the educators, this research elicits teachers' attitudes towards this program. Some of the main results point out the preparedness of these teachers to use ICT in the daily school practice. Furthermore, they expressed their wish for further in-training programs concentrating the pedagogical development of the ICT use in class practice.

Study (Kennedy, 2009) entitled: "The Impact of Training and Development on Job Performance". The purpose of this study seeks to evaluate the impact of the huge investment made in training on job performance of judicial staff. The researcher used both primary and secondary sources of for the conduct the research. The research findings revealed that the training conducted by the Judicial Service of Ghana for its employees was very negligible.

Study (Javied, 2009) entitled: "Impact of Training on Earnings: Evidence from Pakistani Industries". The purpose of this study is to examine the role of training in determination of wages. By utilizing the cross-sectional data from Labor Force Survey 2005-06, results have shown that training is not significant in the determination of wages, which shows the poor quality of training in the overall economy. Results were obtained by Ordinary Least Square (OLS) technique. However, schooling and other demographic variables have expected signs and magnitudes.

Study (Sanchez, Salinas & Harris, 2011) entitled: "Education with ICT in South Korea and Chile". This study presents a linear analytical case study on the development of ICT within the educational systems of Chile and South Korea. Through a comprehensive meta-data analysis and bibliographic review, they collected information on both educational systems and their ICT adoption policies. Key differences necessary to understand how both countries have developed their educational systems by integrating ICT were analyzed, including the educational system structure, the organization of state entities responsible for educational ICT, cultural characteristics, the creation of policies regarding ICT in education, and the effectiveness of such policies for the expansion of infrastructure and the ICT curriculum integration.

Study (Khalili, 2012) entitled: "The role of ICT in-service training of employees of government Organization (Case Study: Institute of Water and Power Unit, Mazandaran)". The purpose of this study also examined the impact of the use of ICT in-service training of staff is, therefore, through a questionnaire on the use of ICT in the process of educating employees about the impact on job satisfaction, learning, improving and upgrading their skill level and also the effect of increasing efficiency and improving the effectiveness of the training process has been collected. The statistical Society of this research is the staff trained in Water & Power Unit, Mazandaran.

Study (Karim, Huda & Khan 2012) entitled: "Significance of Training and Post Training Evaluation for Employee Effectiveness: An Empirical Study on Sainsbury's Supermarket Ltd, UK". The main purpose of this study is to find the answer of how training refers to the acquisitions of knowledge, skill and attitudes. Knowledge, Skills and attitudes are the most essential ingredient for efficient conduct of business through the human resources of an organization. But the impact of these valuable ingredients is often reduced by lack of effective training program. The research paper tries to highlight the necessity of effective training and after training evaluation in designing and implementing training programs for the employees in the retail sector specifically for Sainsbury's supermarket Ltd, UK.

Study (Al-Qudah, Saaty & Al-Momani, 2012) entitled: "Impact of Information Technology on Management Control at Al Bashir Public Hospital: A Case Study of Jordan". The purpose of this study is to measure the role of information systems in management control at AL-Bashir Public hospital. The study included a group of 70 questionnaire staff administrators' questions and had distributed it randomly on a sample of population study, 61 have been subjected to statistical analysis questionnaire at a rate of 87% of the population of the study and using the program of (SPSS) package to extract statistical analysis results. The researcher reached to a significant effect of the components of information systems to management control at Al-Bashir hospital. In the light of theoretical studies and statistical analysis of this study sample reached the following conclusion: (1) This research found that the level of software in hospital is high and available, (2) As of the

results are concerned the physical dimension of computer sub-parts is of more important in terms of relatively level compared with other sub-dimensions of role of information systems in management control, and followed then with sub-networks of local and national levels.

Study (Jawabreh, Allahham, Alrjoub & Ahmad, 2012) entitled: "Impact of Information Technology on Profitability of Airlines Industry: A Case Study of Royal Jordanian Airlines". The purpose of this study is to explore the Impact of information technology on profitability of airlines industry "a case study of Royal Jordanian Airlines. The data collected from the financial statement of Royal Jordanian Airlines is analyzed by using financial and statistical tools. The tools and techniques issued in this study are discussed here. It is very difficult to cover several of aspects of financial management of Royal Jordanian Airlines; hence, focus has been given to study the profitability, capital structure & working capital management. The financial measures of performance are well adequate to monitor returns on IT. This is important as IT specialists always require special measures for IT performance, the current results show that IT do affect the aggregate financial performance measures. Which make them suitable for IT investments assessments.

Study (Singh, Mohanty, 2012) entitled: "Impact of Training Practices on Employee Productivity: A Comparative Study". The study studies the effects of training on employee productivity. This paper provides a review of the current evidence of such a relationship and offers suggestions for further investigation. An extensive review of the literature in terms of research findings from studies that have been trying to measure and understand the impact that individual HR practices like training have on employee productivity across various sectors. The focal point of our review is on training practices and employee productivity and their relationship.

In conclusion, the research's findings are varied. Some studies have found a positive association, some negative and some no association whatsoever. The study concludes with directions for future research by applying different level of analysis on exploring the impact of training practices on employee productivity.

Distinctive Features of the Current Study

Most other studies are largely focused on the experiences of developed countries. There is a scarcity of studies in information and communication technology in less developed countries, particularly in the Jordanian pharmaceutical manufacturing sector. In other words, studies in this field and sector are rare.

Methodology & Procedures of the study

The current study employs a quantitative approach which is consistent with the nature of the study problem and its questions. Employing a quantitative approach enables the current study to reach and collect empirical evidence from a wider spectrum of the current study population.

Population of the study

The population of the current study consists of 15 pharmaceutical manufacturing companies (Amman Chamber of Industry Statistical Manual, 2010). The manufacturing sector is selected because of its significant role in the wealth of Jordan economy and it is considered an economic engine for growth. According to the investment board of Jordan the manufacturing sector is accounted to be one of the integral sectors in the Jordanian economy. Fifteen company of pharmaceutical manufacturing will Bechosento analyze the topic of the role of training on the relationship between information and communication technology and employee performance.

Sample and Unite of Analysis

The survey unit of analysis consisted of (120) managers in different

departments such as managers of human resource department, production and engineering managers, as well as research and development managers. To collect the primary data (120) questionnaire were distributed to them, out of which (115) questionnaire were returned and only (102) questionnaire were suitable for statistical analysis which led to (85%) response rate.

Collection of Data

There are two types of data which is usually used in research primary and secondary data. The primary data are those which are collected for the first time, and thus happen to be original in character. The secondary data on the other hand, are those which have already been collected by someone else and which have already been passed through the statistical process (Neuman, 2005). Secondary data is very helpful in order to grasp knowledge about topic of the study. It helps the researcher to know the topic in detail and helps the researcher to confine the study and also guides to the core issues that are researchable (Kothari, 2005). For this study both primary and secondary sources of data are used for collection of information.

The study focused on collecting the primary data about the researched companies through a structured questionnaire for the purposes of the study. The study used the available secondary data sources including.

Instrument Study

The questionnaire consisted of four sections; the first section is on the general information about the respondent. The second section is on information and communication technology dimensions. The third, section presents information on training. Finally, the fourth section is about employee's performance in the respective organizations. The questionnaire used five point Likert scale measurement, respondents will be provided with

Explanations to use the response scale such as: "Using the following scale please, tick (√) on one number following each statement that represents your level of AGREEMENT with the following".

Dimensions of the Study Questionnaire

The following Table A explains the dimensions of the study questionnaire.

Dimensions	Sub-dimensions	Number of items of each dimension	Total number of items
Information and Communication Technology (ICT)	Hardware	3	12
	Software	3	
	Database	3	
	Networks	3	
Training	Training	6	6
Employee performance	Quantity of work	2	7
	Quality of work	2	
	Speed of work Achievement	3	

Table A: The study instrument (Questionnaire) dimensions.

And accordingly the study instrument (questionnaire) used a five-point likert scale response as explained below:

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	4	3	2	1

However, the relative importance is assigned as in the following equation:

$$\text{Level of Importance} = \frac{\text{Upper limit of response} - \text{Lower limit of response}}{\text{Number of Levels}}$$

Therefore, Three levels identified, High, Mid and Low. Table B illustrates the range of importance level:

S. No.	Mean Range	Level
1	Less than or equal .33	Low
2	More than 2.33 to 3.66	Mid
3	More than 3.67	High

Table B: Range of level of importance scale.

Validity Analysis

By validity it is meant that the instrument should contain items related to the study variables and that it measures them accurately and clearly. To make sure of this, the questionnaire had been sent to a number of specialist reviewers (see appendix B p.114), whose notes were taken into consideration to improve some of the questionnaire items in a manner that fits the study variables measurements.

Reliability Analysis

After validity was established, the items of the study’s questionnaire were tested for reliability. Reliability is an indication of stability and internal consistency with which the instrument measures the concept and helps assess the goodness of a measure (Zikmund, 2000: 280).

Reliability was assessed through examining the Cronbach Alpha coefficient of the questionnaire items (Hair et al., 2006). While the Cronbach’s Alpha coefficients should range from zero to one, Table A shows that reliability coefficients for all items were above the cutoff point of 60% used in the current study. The reliability coefficients for all the items ranged from 0.647 to 0.893. Hence, the current study’s questionnaire items were all of reasonable satisfactory reliability.

Dimension	Sub Dimensions	Number of items	Reliability coefficient
Information and communication technology (ICT)	Hardware	3	0.647
	Software	3	0.742
	Database	3	0.74
	Networks	3	0.672
Training	Learning	6	0.848
Employee performance	Quantity of work	2	0.712
	Quality of work	2	0.718
	Speed of work	3	0.893
	Achievement		
All Dimensions		25	0.888

Table C: Reliability Analysis.

It is obvious through the above Cronbach’s Alpha values that the reliability coefficients of all the study variables are high and suitable for the current study objectives.

Data Analysis and Statistical Techniques

The current study utilized the statistical package for social sciences (SPSS) version 16 for windows in order to analysis the collected data.

The data is first checked for outliers before starting the analysis. Missing or extreme data will be omitted from the analysis process. Then

the data was transform-computed, and was recorded with new names, especially nominal scale data as used according to the study variables. Additionally, statistical analysis techniques were conducted on the data collected through applying, descriptive statistics, and regression analysis in order to test the hypotheses developed in the current study with regards to the relationship amongst study variables.

Demographic Variables of the Study Sample

The following Table 1 presents the demographic variables of the study which includes (Gender, age, Educational level, Years of Experience in the current company, Current job position).

S. No.	Variable	Category	Frequency	Percentage
1	Gender	Male	68	66.7
		Female	34	33.3
2	Age	Less than 30 years	31	30.4
		From 30-39 years	41	40.2
		From 40-49 years	21	20.6
		50 years or more	9	8.8
3	Educational level	High school or less	7	6.9
		Bachelor	84	82.4
		Master	11	10.8
		PhD	0	0
4	Years of Experience in the current company	1-5 years	44	43.1
		6-10 years	18	17.6
		11-15 years	19	18.6
		15 years or more	21	20.6
5	Current job position	Manager	38	37.3
		Assistant Manager	17	16.7
		Department Head	9	8.8
		Assistant Department Head	38	37.3

Table 1: Distribution of the Sample according to demographic variables (N= 102).

Gender: The highest percentage of respondents was “Males” (66.7%) while (33.3%) was “Females”.

Age: The highest percentage of respondents was (40.2%) were in the age group “from 30 - 39 years”, while the lowest was (8.8%) in the age group “50 years or more”.

Educational level: The highest percentage (82.4%) of respondents hold a “Bachelor Degree”, while the lowest was (0%) holds a “PhD Degree”.

Years of experience in the current company: The highest percentage of respondents was (43.1%) were in the years of experience “from 1-5 year”, while the lowest was (17.6%) “From 6-10 years”.

Current job position: The highest percentage of respondents was (37.3%) in the “Manager and Assistant Department Head” category, while the lowest was (8.8%) “Department head”.

Descriptive analysis of study variable: The following section seeks to display and analyze the arithmetic means and standard deviations of the responses of the study sample on the questionnaire items regarding the independent, mediator and dependent variables.

Item	Statement	Mean	S.D	Rank	Level of Importance
6	The computer is an essential part in the completion of the internal and external processes in the company.	4.6961	0.52254	1	High
7	There are a sufficient number of computers to provide information relevant to the implementation of the processes within the company.	4.3333	0.66501	2	High
8	Computer hardware specifications consistent with the information systems used within the company.	4.2941	0.6067	3	High
	Grand Mean & Standard Deviation of Hardware	4.4412	0.59808		

Table 2: Descriptive Statistics of Hardware.

Item	Statement	Mean	S.D	Rank	Level of Importance
9	There is available software in the company designed to perform various operations.	4.2647	0.67379	2	High
10	Software's is updated whenever the need arises.	4.1667	0.75889	3	High
11	Software helps the company departments to access to information.	4.3333	0.60252	1	High
	Grand Mean & Standard Deviation of Software	4.2549	0.6784		

Table 3: Descriptive Statistics of Software.

From the Table 2 the means range was (4.2941 - 4.6961), the highest means was for the item "The computer is an essential part in the completion of the internal and external processes in the company" with a mean of (4.6961), and STD of (0.52254) while the lowest means was for an item "Computer hardware specifications consistent with the information systems used within the company." with a mean of (4.2941) and STD of (0.60670). The overall mean was (4.4412) with STD of (0.59808) with High level of communality.

Table 3 indicated the means range was (4.1667-4.3333), the highest means was for the item "Software helps the company departments to access to information." with a mean of (4.3333), and STD of (0.60252) while the lowest means was for an item "Software's is updated whenever the need arises." with a mean of (4.1667) and STD of (0.75889). The overall mean was (4.2549) with STD of (0.6784) with High level of communality.

Item	Statement	Mean	S.D	Rank	Level of Importance
	Grand Mean & Standard Deviation of Networks	4.1317	0.68834		

12	Database helps to provide the data and information about the employees of the company.	4.4216	0.58760	1	High
13	Database provides the required data in an efficient manner and timely appropriate within the company.	4.2549	0.71319	2	High
14	Database provides the required reports for managers in the process of evaluating the performance of employees.	4.0392	0.70249	3	High
	Grand Mean & Standard Deviation of Database	4.2386	0.66776		

Table 4: Descriptive Statistics of Database.

From the Table 4 the means range was (4.0392-4.4216), the highest means was for the item "Database helps to provide the data and information about the employees of the company." with a mean of (4.4216) and STD of (0.58760) while the lowest means was for an item "Database provides the required reports for managers in the process of evaluating the performance of employees." with a mean of (4.0392) and STD of (0.70249). The overall mean was (4.2386) with STD of (0.66776) with High level of communality.

Table 5 indicated the means range was (3.9510-4.2941), the highest means was for the item "Networks provide a communication medium with high efficiency." with a mean of (4.2941), and STD of (0.71183) while the lowest means was for an item "Internal information networks used to connect the units of the company with the outside community." with a mean of (3.9510) and STD of (0.74962). The overall mean was (4.1317) with STD of (0.68834) with High level of communality.

Item	Statement	Mean	S.D	Rank	Level of Importance
15	Networks provide a communication medium with high efficiency.	4.2941	0.71183	1	High
16	Networks connect all users in several sources of nformation at the same time which helps in speed business performance.	4.1471	0.60357	2	High
17	Internal information networks used to connect the units of the company with the outside community.	3.9510	0.74962	3	High
	Grand Mean & Standard Deviation of Networks	4.1317	0.68834		

Table 5: Descriptive Statistics of Networks.

From the Table 6 the means range was (3.7059-4.2157), the highest means was for the item “Training provides the possibility of doing business easily in the company.” with a mean of (4.2157) and STD of (0.59081) while the lowest means was for an item “Involve all employees in the company in training courses for the use of information systems in their

business.” with a mean of (3.7059) and STD of (0.76544). The overall mean was (3.9984) with STD of (0.67868) with High level of communality.

Table 7 indicated the means range was (4.2843-4.4510), the highest means was for the item “Information and communication technology helps to achieve a larger number of tasks.” with a mean of (4.4510), and STD of (0.50005) while the lowest means was for an item “Information and communication technology helps to reduce workload.” with a mean of (4.2843) and STD of (0.53357). The overall mean was (4.3677) with STD of (0.51681) with High level of communality.

Item	Statement	Mean	S.D	Rank	Level of Importance
18	Employees are trained in information systems applied in the company.	3.9020	0.72453	5	High
19	Training plans and programs of the company under of continuous development in accordance with technological developments.	3.9118	0.64644	4	High
20	Involve all employees in the company in training courses for the use of information systems in their business.	3.7059	0.76544	6	High
21	Gain new skills from training increaseth the chance in harmony with the work.	4.1863	0.55812	2	High
22	Training provides the possibility of doing business easily in the company.	4.2157	0.59081	1	High
23	Company believes that training the best way to acquire the necessary skills to members of their employees.	4.0686	0.78677	3	High
	Grand Mean & Standard Deviation of Training	3.9984	0.67868		

Table 6: Descriptive statistics of Training.

From the Table 8 the means range was (4.2941-4.3922), the highest means was for the item “Information and communication technology helps to achieve the work within the required specifications.” with a mean of (4.3922) and STD of (0.54785) while the lowest means was for an item “Information and communication technology helps to reduce errors.” with a mean of (4.2941) and STD of (0.55559). The overall mean was (4.3432) with STD of (0.55172) with High level of communality.

Item	Statement	Mean	S.D	Rank	Level of Importance
24	Information and communication technology helps to achieve a larger number of tasks.	4.451	0.50005	1	High

25	Information and communication technology helps to reduce workload.	4.2843	0.53357	2	High
26	Information and communication technology helps to save time.	4.1733	0.52346	3	High
	Grand Mean & Standard Deviation of Quantity of Work	4.3028	0.51902		

Table 7: Descriptive statistics of Quantity of Work.

From the Table 9 the means range was (4.5000-4.6275), the highest means was for the item “Information and communication technology helps to save time.” with a mean of (4.6275), and STD of (0.48587) while the lowest means was for an item “Information and communication technology helps to achieve greater flexibility in work.” with a mean of (4.5000) and STD of (0.52180). The overall mean was (4.5588) with STD of (0.50904) with High level of communality.

Item	Statement	Mean	S.D	Rank	Level of Importance
27	Information and communication technology helps to reduce errors.	4.2941	0.55559	2	High
28	Information and communication technology helps to achieve the work within the required specifications.	4.3922	0.54785	1	High
29	Information and communication technology helps to improve work continuously.	4.2721	0.53673	3	High
	Grand Mean & Standard Deviation of Quality of Work	4.3194	0.54672		

Table 8: Descriptive statistics of Quality of Work.

Item	Statement	Mean	S.D	Rank	Level of Importance
28	Information and communication echnology helps to save time.	4.6275	0.48587	1	High
29	Information and communication technology helps to provide effort.	4.5490	0.51947	2	High
30	Information and communication technology helps to achieve greater flexibility in work.	4.5000	0.52180	3	High
	Grand Mean & standard deviation of speed of work achievement	4.5588	0.50904		

Table 9: Descriptive Statistics of speed of work achievement.

Study Hypotheses Testing

The multiple liner regressions were used to test the hypothesis of the study. Further, the study Hypotheses where tested as per the role of thumb that provides to accepts the hypotheses if its calculated value was higher than its tabulated value.

First Main Hypothesis

The first hypothesis postulated “There is statistical significant impact of training at the level ($\beta \leq 0.05$) on employees’ performance. Table 10 indicated the results of regression analysis for testing the first hypothesis of the study.

Variable	R ²	F Calculated	F Tabulated	Beta	Sig.
Employees performance	0.143	16.684	1.39	0.378	0.000

Table 10: Simple Regression Results for the Impact of training on Employees Performance.

The results of the regression analysis that regress training on employee’s performance are shown in table (4.10). It indicated that training explained 14.3% of the variance, and the value of Beta is (0.378), and the value of calculated F (16.684) which is higher than tabulated F value (1.39) at the confidence level ($\alpha \leq 0.05$), and the value of statistical significance level is (0.000) which is less than the value of the confidence level ($\alpha \leq 0.05$). Thus, rejected the null hypothesis and accepted the alternative hypothesis, in an indication that there is a statistical significant impact of training on employee’s performance.

Sub Hypothesis 1-1

The sub hypothesis (1-1) postulated “There is statistical significant impact of training at the level ($\alpha \leq 0.05$) on quantity of work”. Table 11 indicated the results of regression analysis for testing the first hypothesis of the study.

Variable	R ²	F Calculated	F Tabulated	Beta	Sig.
Quantity of work	0.075	8.053	1.39	0.273	0.000

Table 11: Simple Regression Results for the Impact of Training on Quantity of work.

The results of the regression analysis that regress training on quantity of work are shown in Table 13. It indicated training explained 7.5% of the variance, and the value of Beta is (0.273), and the value of calculated F (8.053) which is higher than tabulated F value (1.39) at the confidence level ($\alpha \leq 0.05$), and the value of statistical significance level is (0.000) which is less than the value of the confidence level ($\alpha \leq 0.05$). Thus, rejected the null hypothesis and accepted the alternative hypothesis, in an indication that there is a statistical significant impact of training on quantity of work.

Sub Hypothesis 1-2

The sub hypothesis (1-2) postulated “There is statistical significant impact of training at the level ($\alpha \leq 0.05$) on quality of work”. Table 12 indicated the results of regression analysis for testing the first hypothesis of the study.

Variable	R ²	F Calculated	F Tabulated	Beta	Sig.
Quality of work	0.087	9.491	1.39	0.294	0.000

Table 12: Simple Regression Results for the Impact of Training on Quality of work.

The results of the regression analysis that regress training on quality of work are shown in Table 12. It indicated training explained 8.7% of

the variance, and the value of Beta is (0.294), and the value of calculated F (9.491) which is higher than tabulated F value (1.39) at the confidence level ($\alpha \leq 0.05$), and the value of statistical significance level is (0.000) which is less than the value of the confidence level ($\alpha \leq 0.05$). Thus, rejected the null hypothesis and accepted the alternative hypothesis, in an indication that there is a statistical significant impact of training on quality of work.

Sub Hypothesis 1-3

The sub hypothesis (1-3) postulated “There is statistical significant impact of training at the level ($\alpha \leq 0.05$) on speed of work achievement”. Table 13 indicated the results of regression analysis for testing the first hypothesis of the study.

Variable	R ²	F Calculated	F Tabulated	Beta	Sig.
Speed of work achievement	0.129	14.807	1.39	0.359	0.000

Table 13: Simple Regression Results for the Impact of Training on Speed of work achievement.

The results of the regression analysis that regress training on speed of work achievement are shown in Table 13. It indicated training explained 12.9% of the variance, and the value of Beta is (0.359), and the value of calculated F (14.807) which is higher than tabulated F value (1.39) at the confidence level ($\alpha \leq 0.05$), and the value of statistical significance level is (0.000) which is less than the value of the confidence level ($\alpha \leq 0.05$). Thus, rejected the null hypothesis and accepted the alternative hypothesis, in an indication that there is a statistical significant impact of training on speed of work achievement.

The Second Main Hypothesis

The second main hypothesis postulated “There is statistical significant impact of information and communication technology at the level ($\alpha \leq 0.05$) on employee’s performance”. Table 14 indicated the results of multiple regression analysis for testing the second hypothesis of the study.

Variable	R ²	F Calculated	F Tabulated	Beta	Sig.
Employees Performance	0.136	15.699	1.39	0.368	0.000

Table 14: Simple Regression Results for the Impact of Information and Communication Technology on Employee’s Performance

The results of the regression analysis that regress the four components of information and communication technology on employee’s performance are shown in Table 14. It indicated that the four components together explained 13.6% of the variance, and the value of Beta (0.368) and the value of calculated F (15.699) which is higher than tabulated F value (1.39) at the confidence level ($\alpha \leq 0.05$), and the value of statistical significance level is (0.000) which is less than the value of the confidence level ($\alpha \leq 0.05$). Thus, rejected the null hypothesis and accepted the alternative hypothesis, in an indication that there is a statistical significant impact of information and communication technology on employee’s performance.

Sub Hypothesis 2-1

The sub hypothesis (2-1) postulated “There is statistical significant impact of information and communication technology at the level ($\alpha \leq 0.05$) on quantity of work”. Table 15 indicated the results of regression analysis for testing the first sub hypothesis of the study.

Variable	R ²	F Calculated	F Tabulated	Beta	Sig.
Quantity of Work	0.145	17.014	1.39	0.381	0.000

Table 15: Simple Regression Results for the Impact of Information and Communication Technology on Quantity of Work.

The results of the regression analysis that regress the four components of information and communication technology on quantity of work are shown in Table 15. It indicated that the four components together explained 14.5% of the variance, and the value of Beta (0.381), and the value of calculated F (17.014) which is higher than tabulated F value (1.39) at the confidence level ($\alpha \leq 0.05$), and the value of statistical significance level is (0.000) which is less than the value of the confidence level ($\alpha \leq 0.05$). Thus, rejected the null hypothesis and accepted the alternative hypothesis, in an indication that there is a statistical significant impact of information and communication technology on quantity of work.

Sub Hypothesis 2-2

The sub hypothesis (2-2) postulated “There is statistical significant impact of information and communication technology at the level ($\alpha \leq 0.05$) on quality of work”. Table 16 indicated the results of regression analysis for testing the second sub hypothesis of the study.

Variable	R ²	F Calculated	F Tabulated	Beta	Sig.
Quality of Work	0.050	5.258	1.39	0.224	0.000

Table 16: Simple Regression Results for the Impact of Information and Communication Technology on Quality of Work.

The results of the regression analysis that regress the four components of information and communication technology on quality of work are shown in Table 16. It indicated that the four components together explained 5.0% of the variance, and the value of Beta (0.224), and the value of calculated F (5.258) which is higher than tabulated F value (1.39) at the confidence level ($\alpha \leq 0.05$), and the value of statistical significance level is (0.000) which is less than the value of the confidence level ($\alpha \leq 0.05$). Thus, rejected the null hypothesis and accepted the alternative hypothesis, in an indication that there is a statistical significant impact of information and communication technology on quality of work.

Sub Hypothesis 2-3

The sub hypothesis (2-3) postulated “There is statistical significant impact of information and communication technology at the level ($\alpha \leq 0.05$) on speed of work achievement”. Table 17 indicated the results of regression analysis for testing the third sub hypothesis of the study.

Variable	R ²	F Calculated	F Tabulated	Beta	Sig.
Speed of Work Achievement	0.101	11.292	1.39	0.319	0.000

Table 17: Simple Regression Results for the Impact of Information and Communication Technology on speed of work achievement.

The results of the regression analysis that regress the four components of information and communication technology on speed of work achievement are shown in Table 17. It indicated that the four components together explained 10.1% of the variance, and the value of Beta (0.319), and the value of calculated F (11.292) which is higher than tabulated F value (1.39) at the confidence level ($\alpha \leq 0.05$), and the value of statistical significance level is (0.000) which is less than the value of the confidence level ($\alpha \leq 0.05$). Thus, rejected the null hypothesis and accepted the alternative hypothesis, in an indication that there is

a statistical significant impact of information and communication technology on speed of work achievement.

The Third Main Hypothesis

The third main hypothesis postulated “There is statistical significant impact of training and information and communication technology at the level ($\alpha \leq 0.05$) on employees’ performance”. Table 18 indicated the results of multiple regression analysis for testing the third hypothesis of the study.

Variable	R ²	F Calculated	F Tabulated	Sig.
Employees’ Performance	0.196	12.046	1.39	0.000

Table 18: Multiple Regression Results for the Impact of Training and Information and Communication Technology on Employees’ Performance.

The results of the multiple regression analysis that regress Training and information and communication technology on Employees’ Performance are shown in Table 18. It indicated that both together explained 19.6% of the variance, and the value of calculated F (12.046) which is higher than tabulated F value (1.39) at the confidence level ($\alpha \leq 0.05$), and the value of statistical significance level is (0.000) which is less than the value of the confidence level ($\alpha \leq 0.05$). Thus, rejected the null hypothesis and accepted the alternative hypothesis, in an indication that there is a statistical significant impact of training and information and communication technology on employees’ performance. The following table shows the significant impact of each one of the independent variables.

Independent Variables	Unstandardized Coefficients	Standardized Coefficients	t value	Sig.
	B	Beta		
(Constant)	2.553		6.361	0.000
Training	0.205	0.271	2.718	0.008
Information and Communication Technology	0.251	0.254	2.548	0.012

Table 19: Unstandardized Coefficients and Standardized Coefficients of Multiple Regressions for Training and Information and Communication Technology.

Dependent Variables: Employees’ Performance

The results in table 19 explained that training is the most significant where (Beta=0.271, Sig=0.008) and it positively and directly regresses on employees performance, followed by information and communication technology where (Beta=0.254, Sig=0.012) and it positively and directly regresses on employee performance.

Conclusions

The main results can be summarized as follows: (1) The importance level of training in pharmaceutical manufacturing companies in Amman was high which showed there was awareness among respondents in relation to the dimension of training. (2) The importance level of information and communication technology in pharmaceutical manufacturing companies which indicate there was awareness among respondents in relation to the dimension of information and communication technology. (3) The importance level of employees’ performance in pharmaceutical manufacturing companies in Amman was high. The respondents answers’ indicated that employees’. (4) There was statistical significant impact of training on employee performance at level at level ($\alpha \leq 0.05$). The results showed that there is a statistically significant impact between members of the research sample answers in relation to dimension which provides. (5) There was a statistical

significant impact of Information and communication technology on employees' performance at level ($\alpha \leq 0.05$). The results showed that there is a statistically significant impact between members of the research sample answers in relation to dimension which provides. The researcher reply these results that the concept of information and communication technology. There was a statistical significant impact of training and Information and communication technology on employees' performance at level ($\alpha \leq 0.05$). The results showed that there is a statistically significant impact between members of the research sample answers in relation to dimension which provides.

Recommendations: Based on the study results the researchers suggests the following recommendations Enhancing information and communication technology tools is important in pharmaceutical manufacturing companies to improve individual employees' performance in terms of quantity, quality, and speed of work achievement, to keep an updated technology tools in pharmaceutical manufacturing companies which will help employees to perform their work accurately, efficiently and effectively. Delivering employees' training programs related to new software applications is necessary to improve individual employees' performance due its functional role in the learning process. And finally managers should design training procedural and standards in order to advance the employee individual performance through more effective performance appraisal.

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