

# “The influence of e-conferences and e-meetings on increasing communication skills among leaders in Jordanian mining and manufacturing industries”

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# THE INFLUENCE OF E-CONFERENCES AND E-MEETINGS ON INCREASING COMMUNICATION SKILLS AMONG LEADERS IN JORDANIAN MINING AND MANUFACTURING INDUSTRIES

## Abstract

This study aims to examine the influence of e-communication (e-meetings and e-conferences) on the communication skills of managers and leaders (decision making, problem solving, consistency, productivity and better work flow). Quantitative approach was employed to achieve the aim; 150 managers and leaders responded to a self-administered questionnaire, which was tackled later using SPSS.

The results of the study confirmed an undeniable influence of e-communications on communication skills of managers and leaders within Jordanian mining and manufacturing industries; the most influenced variable was decision-making process associated with the real-time data that e-communication means can provide to decision makers (data, information, figures and numbers), which facilitated a faster ability to take decisions and avoid risks among organizations. The study also demonstrated that electronic meetings and conferences are based on transmitting voice over internet protocol (VoIP), which allows voice to be transmitted over the Internet, which is key to facilitating real-time electronic meetings. The study recommended adopting more electronic means of communication as an approach to avoid loss of time and efforts in face-to-face communication.

**Keywords** communications, voice over internet protocol (VoIP), productivity, work flow, decision making, Jordan

**JEL Classification** M15, O15

## INTRODUCTION

The process of communicating with other people is one of the basics of daily life, until silence has become a type of communication with others, because it belongs to body language, and the importance of communication lies in the process of promoting peoples' cultures, and this skill works to advance and sustain life. This study aims to broaden the bridge of cooperation by bridging the gap between communication concepts, understanding the means and barriers to communication, and effective communication strategies (Ferencová et al., 2014). Alsaad et al. (2014) argued that the process of communication is a link between people, since this process is a social activity in which people interact with each other and that any activity must be a set of rules governing this activity in terms of elements and constraints. Meetings are considered one of the most important activities carried out by institutions and companies, in which topics affecting the management of companies and institutions are



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discussed and considered a source of evaluation and guidance for the corporate management team to achieve the maximum benefit for employees and users.

As it can be seen above, having communication skills is not only about obtaining a skill; it is rather about using these skills in the right way and benefiting from the results that can be generated from them. According to Pearson (2017), having good communications can interact with better decision-making process that is obtained by individuals due to their ability to communicate better with others. Gibson and Sodeman (2014) debated that when there are good communication skills, the ability to solve problems increases due to individuals' developed interaction and better understanding of problems.

Attaran et al. (2019) consider that communication in general plays a role in presenting better productivity from individuals; they also added that productivity can be further supported by employing digital means like e-tools and means within the business environment, which helps in supporting productivity among individuals through giving them more time to create consistency in their work and avoid depletion of time and efforts as all their needs can be met through the digital means.

Chaffey et al. (2019) believe that the employment of electronic tools within the business environment is among the things that can improve the quality of business outputs because of the possibility of providing all the information and data necessary to work through electronic tools. This matter contributes greatly to improving the level of harmony of business within the organization, especially those organizations that have more than one branch, as modern technology and modern electronic tools, such as electronic meeting techniques and teleconferencing, provide a kind of harmony between the branches' activities without the need for individuals to move from one branch to another.

According to Wróbel (2017), a meeting system is the main communication channel for completing meetings electronically between the departments and units of an institution and the possibility of holding meetings with external parties, where the system aims to implement and automate the work of electronic meetings between the concerned authorities, archive meeting items, conduct voting operations on meeting items, come up with recommendations, generate meeting minutes and send it to the relevant authorities directly electronically, with the meeting being available, either audio or video. Muhamedi and Ariffin (2017) and Niraula (2012) supported the same allegations arguing that nowadays, many organizations depend on e-meetings and e-conferences as an approach to keep the business up to date and keep higher management exposed to all activities, risks, and problems that other branches might be exposed to.

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## 1. LITERATURE REVIEW

Electronic communication (E-Communication) is the process in which information is exchanged or entertainment is provided, whether on the personal or practical level, using modern technology. This concept has evolved over time, and it became possible to communicate from one continent to another within a few seconds until the world became like a small village. According to Kock (2005), there are many electronic means of communication, programmers and experts are still busy at this moment in an attempt to find easy and practical ways to communicate, as it started at the beginning with a mobile or cell phone, then

chatting programs on the Internet, then chatting programs with sound and image. Andreu et al. (2010) stated that the main goal of modern means of communication is to facilitate communication and bring people closer together, and it has succeeded – without doubt – in that as it has become possible to communicate with the outside world and publish information and search for it easily, and the world has become like a newspaper whose news is known minutes after its occurrence. This made our lives easier and saved a lot of time and effort, and this also gives us an opportunity to show ourselves and perhaps our hidden talents that we have always dreamed of unleashing. Generally speaking, Wu and Lee (2005) defined the idea of

e-communication as a type of communication done through electronic media to send and exchange information and ensure that it reaches the parties concerned by relying on computers and building video calls and remote photography in order to share pictures, drawings and maps, or exchange ideas and opinions, solve problems and manage business.

Kirakosyan and Dănăiață (2014) argued that the emergence of technologies in business environment have speeded the process of development through giving them an upper hand that is based on technology. Nowadays, according to Skudiene et al. (2015), most businesses depend on technology to complete actions that they cannot complete due to obstacles attributed to time and place. Babin and Halilovic (2017) presented some of communication actions that business has adopted using technologies included the idea of built-in reality devices through applying different tools that help in making the ideas vivid as if we were in the same room. Whatever the employer tries to explain the ideas that he wants to implement, he cannot reach his work team with the degree of full understanding it achieves when presenting the project to them on the ground. Among the technological means allowing this is the “HoloLens” from Microsoft, which allow its user to see project designs as if they have already been implemented, and therefore the team can communicate with each other even if they are in different parts of the world. In addition to that, there appeared the idea of e-meeting rooms. This idea refers to holding meetings through technological means like VIA line of collaboration tools that help hold meetings and employees in their offices or perhaps in countries other than the state the headquarters of the company. VIA provides the possibilities of connecting companies with each other through video communication, which allows working as a team regardless of distance.

Internet of Things (IoT) also appeared as a mean of e-communication, it offers users many advanced technological means in various fields. With regard to work, IoT has provided comfortable means that make employees focus on developing their performance without regard to the issue of distance from the company's head-

quarters. Wearable technology also appeared as a means of communication, which contributed greatly to deepening the level of communication like watches and smart wristbands. These means have allowed employees to take care of their health, even in the work place, which makes them less tired and more productive.

With the course of time and the continuous research and development, there appeared many types of e-communication, including video chats, e-meetings, e-conferences and webinars as electronic tools used in businesses to hold conference and meetings remotely without the need for all individuals to be together in the same place. Kock (2005) argued that organizations have been adding cameras of various types and shapes to video call applications, which enabled leaders and managers to communicate with others, exchange views and solve problems with the ability to know who they are talking to.

Andreu et al. (2010) indicated that e-communications can be categorized into different types such as messages, voice calls, e-mail, social media, etc. It is worth noting that e-communication has changed due to the way the audience interacts and communicates with each other for different purposes, but by relying on these methods communicating with the outside world have become better.

According to Wu and Lee (2005), e-meetings and conferences are a gathering of a group of people that takes place through the electronic media instead of the traditional method of physical attendance, and the most common form of electronic meeting is conducted through web-based software that allows individuals and groups from all over the world to hold meetings without actually traveling to an agreed location.

The ability to communicate effectively is an important life skill, as people need this skill at all levels of their daily life, such as interaction with family members, friends, relatives, and co-workers. Ahn (2011) argued that communication skills are one of the first goals that an individual tries to master in an innate way. According to Raymond and Bergeron (2008), the concept of communication is a process of interaction and communication between two parties, or more within many factors

and influences; it includes the ability to explain ideas, and clearly present them to the other party, taking into account the differences of geographical locations.

The concept of communication refers to a process of transferring ideas, information, feelings for others, it is a process of exchange of ideas. Andrews and Krairit (2009) saw that communication as a process in which information is exchanged between people, through symbols, signs, or behaviors. Nikolova (2009) noted that e-communication, in its simplest sense, helped to transfer information from one place to another either by using voice, writing or sight, and there are types of non-verbal communication represented in the use of body language and various gestures such as the movement of hands and the direction of eyes. Vrabie (2013) believes that communication skills indicate the individual's ability to pass information to others in a clear manner and the ability to understand the information.

Regarding the types of communication skills, Raymond and Bergeron (2008) argue that communication is about holding many skills that ease the process of delivering information and exchange it between individuals. The author mentioned some of the main types of communication skills, among them is the skill of asking a question, which aims to collect information from the other party, or to build a relationship with them if it was the first meeting; it is useful because it collects information in a short time and introduces an element of suspense for discussion. Raymond and Bergeron (2008) also mentioned the listening skills, which include good listening to the other party's words, without interruption so that they can fully communicate and avoid confusion because of the interrupting their conversation.

## 2. AIMS AND HYPOTHESES

Based on above literature review, this study focuses on examining the influence of e-communication means in a business environment and its role in developing communication skills among leaders and managers in mining and manufacturing industries in Jordan.

The aim of the study was achieved by reaching the following set of objectives:

- To understand the basic meaning of e-communications;
- highlight the main e-communication tools carried out by leaders and managers; and
- focus on the aspects of communication skills that can be influenced by e-communication means.

Examining the previously presented literature review and depending on the main aim of the study, the focus was on realizing the following set of hypotheses.

### 2.1. Main hypothesis

*H: E-communications for business through e-conferences and e-meetings positively influence communication skills of managers of Jordanian mining and manufacturing industries.*

### 2.2. Sub-hypotheses

*H1: E-communications for business through e-conferences and e-meetings positively influence decision-making skills among managers of Jordanian mining and manufacturing industries.*

*H2: E-communications for business through e-conferences and e-meetings positively influence problem-solving skills of managers of Jordanian mining and manufacturing industries.*

*H3: E-communications for business through e-conferences and e-meetings positively influence productivity skills of managers of Jordanian mining and manufacturing industries.*

*H4: E-communications for business through e-conferences and e-meetings positively influence consistency among managers of Jordanian mining and manufacturing industries.*

H5: *E-communications for business through e-conferences and e-meetings positively influence better work flows among managers of Jordanian mining and manufacturing industries.*

### 3. METHODS

This study used a quantitative approach through utilizing a questionnaire based on a 5-point Likert scale. A questionnaire consisted of two main sections; the first section contained demographic variables (age, gender, education, and experience), while the other section contained statements related to independent variables (E-Communications for business) and dependent variables, including variables of communication skills (decision making, problem solving, productivity, consistency and better work flow).

The population of the study consisted of all leaders and managers from the Jordanian mining and manufacturing industries. A convenient sample of 185 was chosen to resemble an exposed sample of the study questionnaire. After the application process, it was found out that 150 were properly filled and statistically manageable; this indicated that the response ratio was 81%.

Through Cronbach’s alpha, the reliability test resulted in a value of 0.937 for all the items within the study, the alpha however was greater than 0.60, which indicated the tool consistency that enhanced its use in the study.

### 4. RESULTS

#### 4.1. Demographics

**Table 1.** Gender

Gender	Frequency	Percent	Valid percent	Cumulative percent
Valid	Male	119	79.3	79.3
	Female	31	20.7	100.0
	Total	150	100.0	–

The analysis shows that the majority of the sample (79.3%) were individuals with the frequency of 119 respondents, compared to females who formed only 31% of total sample.

**Table 2.** Education

Education	Frequency	Percent	Valid percent	Cumulative percent
Valid	Diploma	26	17.3	17.3
	BA	107	71.3	88.7
	MA	15	10.0	98.7
	PhD	2	1.3	100.0
	Total	150	100.0	100.0

It was observed that the majority of respondents had a bachelor’s degree? which is 71.3% of the sample, compared with the least of the sample with a PhD, which is only 1.3% of the total sample.

**Table 3.** Age

Age	Frequency	Percent	Valid percent	Cumulative percent
Valid	25-29	24	16.0	16.0
	30-34	64	42.7	58.7
	35-39	30	20.0	78.7
	40-44	18	12.0	90.7
	+45	14	9.3	100.0
	Total	150	100.0	100.0

An analysis of the sample’s responses to education showed that most of the sample (42.7%) was in the age range from 30 to 34 years with frequency of 64 individuals.

**Table 4.** Experience

Experience	Frequency	Percent	Valid percent	Cumulative percent
Valid	2-4	27	18.0	18.0
	5-7	48	32.0	50.0
	8-10	45	30.0	80.0
	+11	30	20.0	100.0
	Total	150	100.0	100.0

Most of the sample had 5-7 years of work experience, which was 32% of the total sample compared to 18% of the sample with 2-4 years of work experience.

#### 4.2. Questionnaire analysis

It appeared that respondents had a positive attitude, given the mean of statements scored higher than the mean of scale 3.00 referring to the results as positive. The statement that received the most positive response turned about to be the 2<sup>nd</sup> statement of the “better work flow” variable, articulated “*Online meetings and conferences provided managers with a better ability to collect informa-*

**Table 5.** Descriptive analysis of questionnaire statements

Statement	Mean	Std. deviation
<b>E-meetings and e-conferences</b>		
Remote meetings helped in being up to date with developments in other branches	3.59	1.254
With e-meetings all employees have the ability to take part in important meetings	3.49	1.214
The organization depends on e-conferences and seminars to develop internal skills and talents	3.48	1.128
All affiliates are connected to us through weekly/monthly e-meetings	3.39	1.146
<b>Communication skills</b>		
<b>Decision making</b>		
E- meeting methods facilitated the existence of a rapid measurement of results and various aspects of performance in the framework of the oversight function	3.38	1.053
An online meeting provides correct and accurate information that helped managers to make effective management decisions	3.21	1.115
Reliance on E- meeting and conferences has accelerated the basis for decision-making among managers	3.27	1.034
The technology of remote communication provided the possibility of receiving information and supplying decisions directly without delay	3.23	1.011
<b>Problem solving</b>		
The online meeting gave the organization the ability to solve problems as they arise	3.31	.956
It is possible through e-meetings to avoid the expansion of serious problems through solving it on time	3.27	1.021
Risk strategies can be quickly implemented through e-meetings	3.24	1.047
Shortage in staff and skills can be tackled through e-conferences and e-seminars	3.45	1.040
The online meeting gave the organization the ability to solve problems as they arise	3.39	1.054
<b>Productivity</b>		
Electronic meetings contribute to increasing the number of participants in the planning processes without much trouble and without consuming a long time	3.55	1.185
The electronic meetings improved the integration and coordination between various levels of the organization	3.39	1.140
Electronic meetings and conferences increased the opportunities for administrative cadres and leaders to engage with various stakeholders, especially those outside the organization and directly influence their work	3.67	1.065
Employees' evaluation and productivity can be enhanced through e-means of communications	3.62	1.001
<b>Consistency</b>		
The possibilities of meeting remotely greatly changed the nature of administrative practice through its impact on the managers' functions	3.64	1.005
The ability of electronic meetings and conferences to collect, analyze, evaluate, and communicate information has greatly contributed to improving administrative roles	3.49	1.015
The meetings and electronic conferences gave clarity to the goals of the organization in the eyes of all parties and influencers	3.79	.971
Merging e-meetings in actual work environments can help in decreasing gaps	3.47	1.008
<b>Better work flow</b>		
Planning, organizing, leadership and oversight have improved a lot as managers use online meeting methods	3.69	.996
Online meetings and conferences provided managers with a better ability to collect information and obtain it at an appropriate time	3.70	.995
The rapid exchange of data, information and opinions facilitated the exchange of information and the enrichment of the planning process	3.49	1.054
Electronic meetings and conferences contributed to enhancing the roles of managers and activating administrative practice in all its aspects	3.64	1.005

tion and obtain it at an appropriate time", scoring a mean of 3.70 and indicating that it was the most positively answered statement.

It was seen that all variables scored a mean higher than the mean of scale 3.00, and this can be re-

ferred to as a positive attitude from respondents to study variables.

To identify the degree of acceptance of study hypotheses, ANOVA and coefficients were used to test hypotheses. Below are the results.

**Table 6.** Descriptive analysis of variables

Variables	Mean	Std. deviation
E-meetings and e-conferences	3.4867	1.00785
Communication skills	3.4630	.68416
Decision making	3.2717	.87898
Problem solving	3.3183	.83641
Productivity	3.5017	.89906
Consistency	3.6350	.85806
Better work flow	3.5883	.78318

### 4.3. Testing the main hypothesis

*H:* E-communications for business through e-conferences and e-meetings positively influence communication skills of managers of Jordanian mining and manufacturing industries.

**Table 7.** Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.580	.336	.332	.55926

**Table 8.** ANOVA

Model	Sum of squares	df	Mean square	F	Sig.	
1	Regression	23.451	1	23.451	74.977	.000 <sup>b</sup>
	Residual	46.291	148	.313	–	–
	Total	69.742	149	–	–	–

**Table 9.** Coefficients

Model	Unstd. coef.		Std. coef.	t	Sig.	
	B	Std. error	Beta			
1	(Constant)	2.091	.165	–	12.674	.000
	E-meetings and e-conferences	.394	.045	.580	8.659	.000

The main hypothesis of the study was tested using linear regression analysis, which scored an R value of 0.58, and t value of 8.659 was significant at 0.05. The results show that an independent variable and dependent variables are correlated. Also, it is found that 33.6% of the variance in the dependent variable is explained by the variance in the independent variable.

As a result, E-communications for business through e-conferences and e-meetings positively influence communication skills of managers of Jordanian mining and manufacturing industries.

### 4.4. Testing sub-hypotheses

*H1:* E-communications for business through e-conferences and e-meetings positively influence decision-making skills of managers of Jordanian mining and manufacturing industries.

**Table 10.** Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.607 <sup>a</sup>	.369	.365	.70064

**Table 11.** ANOVA

Model	Sum of squares	df	Mean square	F	Sig.	
1	Regression	42.465	1	42.465	86.505	.000 <sup>b</sup>
	Residual	72.652	148	.491	–	–
	Total	115.117	149	–	v	–

**Table 12.** Coefficients

Model	Unstd. coef.		Std. coef.	t	Sig.	
	B	Std. error	Beta			
1	(Constant)	1.425	.207	–	6.895	.000
	E-meetings and e-conferences	.530	.057	.607	9.301	.000

The first sub-hypothesis was tested using a linear regression analysis, which scored an R value of 0.607, and t value of 9.301 is significant at 0.05. As results confirmed, the independent variable and dependent variables are correlated. It is also found that 36.9% of the variance in the dependent variable was explained by the variance in the independent variable. Based on that, the study indicated that E-communications for business through e-conferences and e-meetings positively influence decision-making skills of managers of Jordanian mining and manufacturing industries.

*H2:* E-communications for business through e-conferences and e-meetings positively influence problem-solving skills of managers of Jordanian mining and manufacturing industries.

**Table 13.** Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.431 <sup>a</sup>	.185	.180	.75747

**Table 14. ANOVA**

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	19.320	1	19.320	33.672	.000 <sup>b</sup>
	Residual	84.917	148	.574	–	–
	Total	104.237	149	–	v	–

**Table 15. Coefficients**

Model	Unstd. coef.		Std.coef.	t	Sig.	
	B	Std. error	Beta			
1	(Constant)	2.073	.223	–	9.277	.000
	E-meetings and e-conferences	.357	.062	.431	5.803	.000

The second sub-hypothesis was tested using a linear regression analysis, which scored an R value of 0.431, and t value of 5.803 was significant at 0.05. Looking at these results, one can be confirm that the independent variable and dependent variables are correlated. Also, it is found that 18.5% of the variance in the dependent variable is explained by the variance in the independent variable. The study confirmed that E-communications for business through e-conferences and e-meetings positively influence problem-solving skills of managers of Jordanian mining and manufacturing industries.

*H3: E-communications for business through e-conferences and e-meetings positively influence productivity skills of managers of Jordanian mining and manufacturing industries.*

**Table 16. Model summary**

Model	R	R Square	Adjusted R Square	Std. error of the estimate
1	.422 <sup>a</sup>	.178	.173	.81774

**Table 17. ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.470	1	21.470	32.106	.000 <sup>b</sup>
	Residual	98.968	148	.669	–	–
	Total	120.437	149	–	–	–

**Table 18. Coefficients**

Model	Unstd. coef.		Std.coef.	t	Sig.	
	B	Std. error	Beta			
1	(Constant)	2.188	.241	–	9.074	.000
	E-meetings and e-conferences	.377	.066	.422	5.666	.000

The third hypothesis was tested using a linear regression analysis, which scored an R value of 0.422, and t value of 5.666 was significant at 0.05. This confirmed that the independent variable and dependent variables are correlated. Also, it is found that 17.8% of the variance in the dependent variable is explained by the variance in the independent variable. That means E-communications for business through e-conferences and e-meetings positively influence productivity skills of managers of Jordanian mining and manufacturing industries.

*H4: E-communications for business through e-conferences and e-meetings positively influence consistency among managers of Jordanian mining and manufacturing industries.*

**Table 19. Model summary**

Model	R	R Square	Adjusted R Square	Std. error of the estimate
1	.402 <sup>a</sup>	.162	.156	.78823

**Table 20. ANOVA**

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	17.751	1	17.751	28.571	.000 <sup>b</sup>
	Residual	91.953	148	.621	–	–
	Total	109.704	149	–	–	–

**Table 21. Coefficients**

Model	Unstd. coef.		Std.coef.	t	Sig.	
	B	Std. error	Beta			
1	(Constant)	2.441	.232	–	10.499	.000
	E-meetings and e-conferences	.342	.064	.402	5.345	.000

The fourth hypothesis was tested using a linear regression analysis, which scored an R value of 0.402, and t value of 5.345 was significant at 0.05. This confirmed that the independent variable and dependent variables are correlated. Also, it is found

that 16.2% of the variance in the dependent variable is explained by the variance in the independent variable, which means E-communications for business through e-conferences and e-meetings positively influence consistency among managers of Jordanian mining and manufacturing industries.

*H5: E-communications for business through e-conferences and e-meetings positively influence better work flow among managers of Jordanian mining and manufacturing industries.*

**Table 22.** Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.466	.217	.212	.69530

**Table 23.** ANOVA

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	19.843	1	19.843	41.046	.000
	Residual	71.549	148	.483	–	–
	Total	91.392	149	–	–	–

**Table 24.** Coefficients

Model		Unstd. coef.		Std.coef.		t	Sig.
		B	Std. error	Beta			
1	(Constant)	2.326	.205	–		11.342	.000
	E-meetings and e-conferences	.362	.057	.466		6.407	.000

The fifth hypothesis was tested using a linear regression analysis, which scored an R value of 0.466, and t value of 6.407 was significant at 0.05; it confirmed that the independent variable and dependent variables are correlated. Also, it is found that 21.7% of the variance in the dependent variable is explained by the variance in the independent variable meaning that E-communications for business through e-conferences and e-meetings positively influence better work flow among managers of Jordanian mining and manufacturing industries.

## 5. DISCUSSION

This study focused on examining the influence of e-meetings and e-conferences in business environments on managers' and leaders' commu-

nication skills, such as decision making, problem solving, consistency, productivity and better work flow. Depending on quantitative approach and utilizing a questionnaire, a total of 150 managers and leaders in Jordanian mining and manufacturing industries responded to the questionnaire. Descriptive statistics, linear regression and simple regression were used to test hypotheses. The following was confirmed through analysis:

- E-communications for business through e-conferences and e-meetings positively influence communication skills of managers of Jordanian mining and manufacturing industries, with an R value of 0.580.
- Among all the accepted communication skills variables, e-conferences and e-meetings in the business environment were found to have an influence on managers' and leaders' communication skills, mainly on their decision-making ability, with an R value of 0.607 among all variables.
- Of all the adopted communication skills, the least affected variable was consistency, with an R value of 0.402.
- All adopted communication skills variables were influenced by e-meetings and e-conferences in the business environment.

The analysis shows that employing e-communication tools like e-meetings and e-conferences in an organization has a positive influence on communication skills of managers and leaders. The study has accepted all hypotheses and indicated that employing e-communication skills within organizations has the ability to develop communication skills, which leads to better individual and organizational performance.

It was seen from the analysis that e-meetings and conferences had a positive impact on communication skills of managers, as indicated by the results of the questionnaire analysis and the hypothesis testing. The study confirmed that relying on e-conferences and meetings played an active role in deepening the foundations of communication and facilitating it between members of organizations and their branches.

It was also found that this type of communication gave managers and leaders opportunities to meet and discuss matters of work within the times presented without the need to move from one place to another. In addition to that, a result was reached through the study that the organizations under study depended on E-meetings to solve problems and make decisions within the multiple branches of the organization, which contributed to creating better flow of work through its impact on the skills of decision-making and problem-solving processes. Pearson (2017) agreed with this result arguing that benefit of e-meetings and e-conferences was reached due to the ability of digital tools to provide instant information on the problem in addition to direct presence of individuals able to provide managers with the information required for the process of solving problems.

Among the positive effects of electronic meetings and conferences is that it can create drawings, data and plans in real time, in addition to modifying and preserving the entire meeting so that managers can review it at a later time, this matter has contributed a lot to improving the consistency in the required actions due to the presence of real data to sue and employ,

which came to be intact with what Gibson and Sodeman (2014) agreed on.

The study also demonstrated that electronic meetings and conferences lie through the protocol for connecting and transmitting voice over internet protocol (VoIP), which allows the transmission of voice over the Internet, which is key to facilitating electronic meetings in real time. On the productivity level, the study found that electronic meetings and conferences had a significant impact on productivity from the point of view of managers, and this result is consistent with what was indicated by Wróbel (2017) on that reliance on technology in the management of organizations. The author argued that it had a positive impact on productivity by saving the time of managers and leaders moving between branches in order to attend meetings or travel, and adding a lot of costs to the organization to attend important conferences.

Muhamedi and Ariffin (2017) and Niraula (2012) also agreed with the study's findings when they confirmed that electronic meetings and conferences would transform administrative practices from traditional methods into more productive and effective methods by transforming transactions and meetings into fast and simple electronic transactions.

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## CONCLUSION

The interconnectedness of administrative issues and decisions in organizations is very important to ensure that internal and external operations can run smoothly. On the other hand, the interconnectedness of the organization's departments with all its internal and external branches is very important to ensure professionalism and the ability to achieve foreseeable strategic goals.

This study confirmed that the use of the e-communication technology in all its visual and audio forms greatly contributed to ensuring the highest level of interconnection between the departments of organizations through the ability to meet, negotiate and solve problems regardless of the geographical location of the working individuals; this contributed – greatly – to deepening problem-solving skills among individuals, and ensuring the lowest level of risks as a result of the ability to communicate in real time without the need to change the place and the actual meeting in real life. In conclusion, electronic means of communication are considered a double-edged sword, and like other developments of the times, it has disadvantages and negatives summarized in the fact that it isolates people in their devices and make them largely electronic and sometimes harmful, as there is no longer any reason to leave the house and visit relatives to know their conditions or to congratulate them or their dear ones. Also, there is no longer any privacy of news or photos of individuals, as they are made available to everyone.

## RECOMMENDATIONS

Based on the results and conclusion of the study, it is recommended:

- It the surveyed organizations, it was observed that they are interested in their members' participation in scientific conferences related to their business, but they are responsible for travel costs, hotel reservations and lost time, therefore these organizations must comply with electronic conferences and their residence times for remote participation in them.
- The field of manufacturing and mining is in itself expensive, therefore organizations are advised to use electronic means of communication so that managers and leaders are always aware of the latest events, make appropriate decisions and solve problems at the moment.

## AUTHOR CONTRIBUTIONS

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Supervision: Mohd Ahmad Abdel-Qader.

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