

# How Information Technology Affects HR Performance Development in Service Sectors: A Case Study from Bahrain

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The purpose of this paper is to examine the impact of information technology on the development of Human Resource Performance. The study encompasses 278 employees at the Ministry of Labor and Social Development in Bahrain. The paper used the instrument of survey of 41 statements to measure the used variables. The correlation between the used variables was calculated using Pearson's correlation coefficients. For measuring the relationship between Information Technology and HR performance development, simple and multiple regression were used. We found out that Information Technology as a whole explains 42.5% of HR performance development, while dimensions of use of IT explains 39%, IT Infrastructure explains 38.3 and IT Systems explains 19.5%, but no significant differences among the sample responses could be attributed to the demographic variables. This study agrees with some previous studies that were conducted in different cultures and contexts that there is a positive effect of Information Technology on the development of Human Resource Performance.

**Key words:** *Information technology, IT,HR performance,IT infrastructure- HR management, Performance development.*

## Introduction

The study aims to investigate the effect of Information Technology on the development of human resource performance. As information technology is the key driver to reshape all sides of business performed in digital time, HRM is considered a critical segment for organisations to achieve competitive advantage in the present day dynamic and complicated business environment (Turulja and Bajgoric, 2018). The information has become one of the

most important inputs and outputs for any industrial, commercial or even human service activity, whether on the local or international arenas. As stated by Tursunbayeva (2019), with the support of modern technology, firms all over the world are shifting their HR practices and methods to a remarkable extent. Nowadays, every individual, organisation, or society in general has more goals and objectives than before due to the substantial advancements that we have in each and every field. Achieving such goals and objectives necessitates a better use of information technology in various economic, social, cultural and political areas.

Hence, developed organisations tend to establish plans and strategies to develop its information technology capabilities (Kahoro, 2018), which is accompanied by the dominance of various electronic technologies that became an inevitable necessity for all organisations to enhance their human resource performance due to the substantial advantages in processing and storing a huge amount of information in organised, fast and precise methods, which expedite and enhance the human resource performance.

To cope with the exponential increase of IT importance for organisations, the evolution that it has provided could be touched on in all sides of business arenas (Serrano & Pereira, 2020). The organisational environments, with the fast changing services, industries and markets, are required to be capable of constantly adapting to the reduced time-to-market and new concepts and ideas. In the jungle we are living in, human resource management obtains a more critical role than ever for new forms of businesses that require new methods of engaging employees (Rao, 2019).

Hence, it is clear how important it is for organisations to establish an IT system to enhance the performance of their human resources and monitor all related indicators and information, in addition to detecting the organisation's strengths and weaknesses and information related to its internal and external environments and objectives to reach its future strategies, and for that reason, the researchers have chosen the Ministry of Labor and Social Development in Bahrain to investigate the effect of information technology on the development of the human resource performance, due to the perfect representation of this organisational environment to the three employed dimensions of IT and due to the role played by the performance of its employees in the quality of life experienced by many people within Bahrain.

Hence, and according to the above discussion, this study seeks to explore the answers of the following main questions that guided the study design:

- What is the effect of information technology on human resource performance development?, in addition to the questions related to the used dimensions of IT,
- What is the current status of using IT at the study organisation?,
- What is the current status of IT infrastructure, and
- What is the current status of IT systems?

## Literature Review and Hypotheses Development

### *Information Technology and Development of Human Resource Performance*

Information technology, as stated by Kumar (2016), refers to all forms of processing, storing and transmission of information. It might include computers, networks, communication tools, electronic software and fax machines, even though their use is becoming obsolete with the modern alternative methods of documentation. It usually covers a wide spectrum of hardware and software as well, especially the services and applications used by organisations to generate data and knowledge. Information technology is considered as an intellectual and cultural system that could be termed information production culture, as it cannot survive unless it creates such culture, hence, the most important element in information technology is the information-oriented thinking and individuals (Rezaei et al, 2014).

Information technology is a combination of beneficially created thoughts and ideas rather than a group of computers with wires and cables. It is the thinking of intellectual people that generates information (Rezaei et al, 2014). It also refers to the ways of generating and gathering information. Information technology makes access to data possible to anyone anywhere by making computer applications smaller, cheaper more user friendly, and as simple as possible (Cascio, Wayne & Montealegre, Ramiro, 2016). Databases within organisations, that were induced based on the idea of information technology, play an important role in simplifying the complex information processes within the organisations and generate organisational networks through connecting the organisations together. Furthermore, they change the management's short and mid-range insights and perspectives into long range ones (Rezaei et al, 2014). Generally speaking, we find that the concept of information technology covers multiple various arenas, such as hardware and software solutions that allow organisations to gather, organise and evaluate data. Ultimately, this data analysis supports companies in meeting their organisational objectives. In addition, information technology also includes the workflow processes that could expand the organisation's capacity to grow more revenue (Sun et al., 2015).

The application of information technology (IT) has a great standing among basic industries since it plays an important role in different industries, with factors such as productivity, social services and job opportunity improvement. As it plays an important part in almost all industries, especially concerning the factors like productivity, social service and job performance and opportunity improvement, information technology applications have a substantial stance among nowadays' business firms (Yang, 2014).

Nowadays, managers realise that human capital has become the last competitive benefit and IT recruiting can broadly support efficient hiring, together with forming the workforce

(Mamoudou and Joshi, 2014). Hence, one of the strategic factors that can support improvement of the organisation's productivity is information technology as stated by Yang (2014). The beginning of information technology was back in the 18th century, accompanying the industrial revolution in Europe and has continued ever since to improve business operations in different organisations (Harris & Nelson, 2008). Among the fields that have witnessed a substantial improvement based on information technology, we have individual job satisfaction, human resource performance, service quality and long term profitability based on several authors who investigated the effect of information technology in organisations (Law and Jogaratnam, 2005). Thus, we suggest the hypothesis:

**H<sub>1</sub>:** Information Technology has a significant effect on human resource development.

### ***Use of Information Technology and Development of Human Resource Performance***

Information has gained a very important role among the other factors of production over the past three decades. As a consequence of globalisation, competitiveness, expansion of activities and rapid changes in the business environment, information has become a vital strategic factor that is considered nowadays as the most powerful tool in handling challenges, issues and problems of the environment, as well as being a proper instrument of using the available opportunities (Rezaei et al, 2014).

Hence, the establishment of using ICT in an appropriate information technology system to collect, process and store data is of core importance. Even though the use of computerised sets and ICT can never replace human decision making, its role in helping employees and managers to take the right decision through the use of prices information and expediting missions and tasks are undebatable (M. Rezaei et al, 2014). Many business enterprise have realised how important it is to use effective information technology within its business environment to speed up and enhance the performance of tasks and increase its customer satisfaction, in addition to supporting their decision making capabilities, and above all, the organisation's effectiveness. Such adherence was the prime mover to most organisations to move towards the employment of IT with its various applications (Yardley, 2005, p.1).

At this time, information resuscitates vacant and obsolete capabilities and contributes to the development of staff skills. This is due to the fact that new information creates new expectations for the organisation's members and such information changes into skills and work practices after some time and new skill and working grounds will emerge (Vance, 2006).

Having the right skills required for development is one of the symbols of developed human beings that support the use or facilitate the use process (Rezaei et al, 2014). When we have

such skills ready, but we lack the right content, such skills become out of function and cannot meet the organisation's requirements or the individual ones. In general, IT results in the development of human resources in terms of professional development and productivity (Okoye et al., 2013). Thus, we suggest the hypothesis:

**H<sub>2</sub>:** Use of IT has a significant effect on human resources.

### ***Information Technology Infrastructure and Development of Human Resource Performance***

Effective and efficient employment of information technology requires the availability of financial resources to implement IT investments, whether to establish and develop the infrastructure, to purchase the equipment and sets, to conduct periodical maintenance or to train the employees and develop their information technology skills.

If the organisation is willing to make optimal use of the information technology in enhancing the performance of its human resources, that technology should cope with the organisation's functional tasks and objectives and there must be a compatibility between what tasks and missions such technology performs and the requirements necessary to perform them (Harvey & Brown, 2011).

To summarise, the requirements necessary for employing information technology in an organisation are the need for a managerial accounting information system, the need for a central database, use of modern technology in the system and the need for qualified employees (Porter and Millar, 2001).

The concept of information technology concentrates on its infrastructure, based on the fact that it is a combination of use of information and data with computers and communication for such technology (Dalahma, 2012) and components of the information technology could be outlined as physical components that consist of the sets and equipment necessary for input and processing (Kasasbeh, 2011) software, which features man-made instructions to direct the physical components (Qandeelji and Samarae (2012), such as the operating systems (Thompson & Cats, 2013), or the application programs (Stair & Reynolds, 2013).

Human resources are the employees working in different sections of the system and skills of whom determine how successful the system is (Kasasbeh, 2011) and they are classified into specialists/ programmers and end users. So, the hypothesis is:

**H<sub>3</sub>:** IT infrastructure has a significant effect on human resources.



### ***Information Technology Systems and Development of Human Resource Performance***

Information technology converts input to output, namely the raw materials to services and products, using a combination of information, knowledge, equipment, operations and methods. Hence, organisational business units, and organisations in general, have different technologies which entail different methods used to manage them. As Zareimatin (2001) stated, we cannot use, based on the Contingency theory, one method to manage all organisations with different technologies.

Information technology employs a wide variety of systems simultaneously within the organisation to avoid repetition of using the information several times in each system. It includes all variables, whether affecting it or being affected by it, in addition to various sources of information to generate specific purpose information, usually designed in the form of a main system with subsystems and provided with all necessary technical, administrative and human requirements (Al Ubaidi, 2012).

From the above, we conclude that information technology systems differ from one organisation to the other based on the organisation's objectives, environment and capabilities. In general we may specify some of the information technology systems that are used in the governmental service organisations as human resource planning systems, job analysis and recruitment systems, attendance systems, human resource training systems, career path systems, customer relations systems, performance appraisal systems, payroll systems and office automation systems. Hence, we come up with the hypothesis:

**H<sub>4</sub>:** IT systems have a significant effect on human resources.

Many researchers have examined the impact of employing information technology, at different organisations, on human resource development (Jalagat et al., 2017). Studies have shown that the induction of information technology in human resources management helps increase the efficiency of HR operations and positively affects employees' interaction through their inter-communication, in addition to the development and change of work procedures and the skills required, whether for the HR department or the organisation's human resources in general (Jain, 2014).

In addition, the process of employing information technology takes a variety of forms, based on the organisation's needs. It might be limited to electronic timetables, and could go beyond to complicated systems related to whole solutions, and this of course is based on the solutions provided by the electronic HR systems within the organisation. Some of it is related to specific functions, such as recruitment, selection, performance appraisal and compensations, and other functions are based on the used applications. This leads to diversity of information

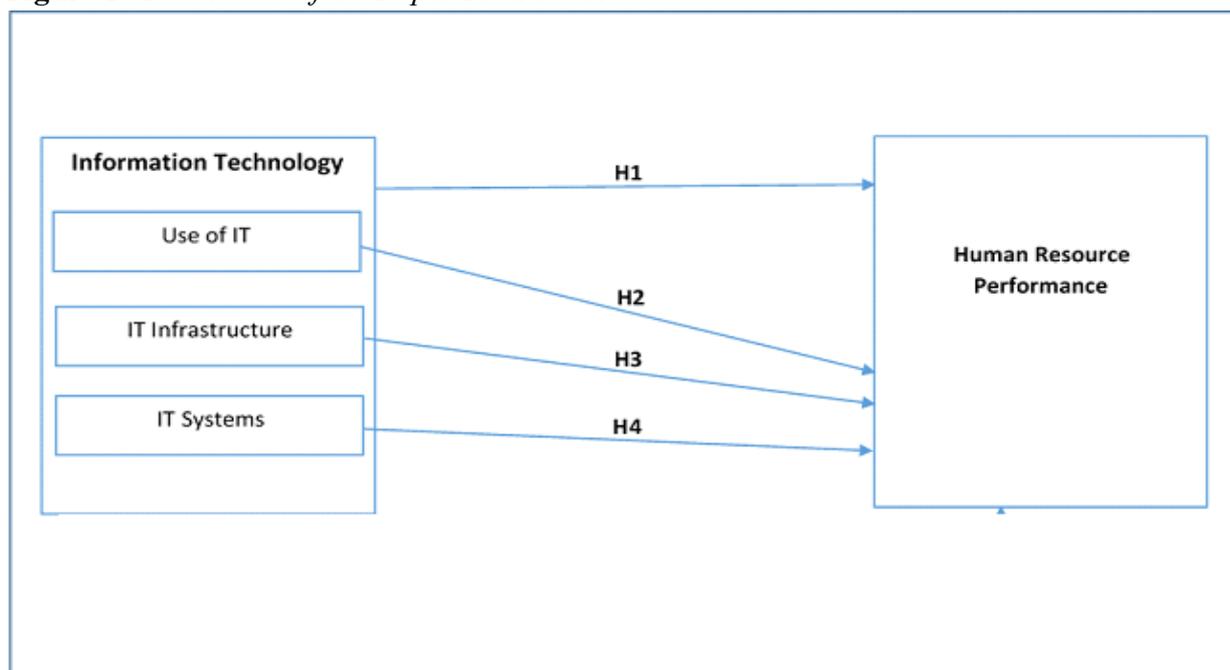
technology use within the organisation. CIPD (2016) indicated that the impact of employing information technology in developing the human resource performance is clear in enhancing the information quality by 91%, enhancing the speed of information providing by 81%, supports decreasing the cost by 35% and enhancing the quality of services provided to employees by up to 56%.

Furthermore, use of information technology creates full access to databases through increasing the range of provided information and individual access to such databases through the electronic gates. In addition it contributes to monitoring documentation, and hence enhancing transparency and disclosure and increasing the capabilities of top management to monitor the different tasks within the organisation (Shilpa & Gopal, 2011). In addition, the application of information technology positively affects levelling up the human resource efficiency and increases the speed of work performance and administrative flexibility, as was noticed from its importance in the evaluation of human resource performance in different organisations (Al Fawzan, 2013).

### Analytical Framework

In this paper, an analytical framework is developed to depict the relationship between Information Technology with its dimensions and Human Resource Performance Development, and the relative demographic variables that might affect the responses of the study sample:

**Figure 1.** *Illustration of the Paper Framework*



## **Methodology**

### ***Research Population and Sample***

Due to the fact that we would encounter some problems with the random sampling due to the many premises of the study organisation and the unavailability of all employees listed, the researchers selected a convenient sample of 278 individuals (n=278) of employees working at the Ministry out of a target population of about 964 employees, which is compatible with (Krejcie & Morgan) the sample size table.

### ***Research Instrument***

After consulting with specialists in the area, and seeking their help and support, researchers have designed the study survey in the light of literature related to the study variables to determine the status quo of using IT at the study organisation and its impact on developing the human resource performance to get the information from the study sample. The survey was designed based on:

1. Determining the main dimensions of the survey, and preparing statements for each one.
2. Consideration was given to the simplicity and clarity of statements to assure ease of response and ease of analysis.
3. The survey was designed in its initial version, then was revised by six Management and Statistics university teachers. Based on that, the survey was rephrased and reformatted to make sure the instrument was appropriate for measurement.

The survey, in its final shape, consisted of the following:

- a- First Section: the demographic variables, to include the elements of age, gender, qualifications, experience, job title and number of IT training courses.
- b- Second Section: Information Technology, to include:
  1. Use of Information Technology (seven statements),
  2. Information Technology Infrastructure (seven statements),
  3. Information Technology Systems (seven statements).
- c- Human Resource Performance Development (20 Statements).

The validity and reliability of the data collection tools were assured using Pearson coefficient and Cronbach's alpha was reached through the use of the statistical analysis tool SPSS.

### ***Response Scale***

This paper's analysis relied on the Likert Scale, which is a five-point scale that offers a range of answer options — from one (strongly disagree) extreme to the other extreme of five (strongly agree).

## Data Analysis

In this part, we will demonstrate the data analysis tables we created from SPSS, and it will be followed by a discussion of the results:

### *Characteristics of the Sample Demographics*

**Table 2:** Description of Basic and final Sample of Employees at the Ministry

Variable	Category	Repetition	N.	%	Total %
Gender	M	103	260	%39.6	%100
	F	157		%60.4	
Age	>30	95	260	%36,5	%100
	31-35	92		%35.4	
	36-40	61		% 23.5	
	41-45	12		% 4.6	
Qualifications	Diploma and Less	121	260	%46.5	%100
	B.Sc.	131		%50.4	
	Graduate Studies	8		%3.1	
Experience	5 and Less	92	260	%35.4	%100
	6-10	96		%36.9	
	11-15	65		%25	
	16 and more	7		%2.7	
Position	Employee	236	260	%90.8	%100
	Supervisor	16		%6.2	
	Section Chief	5		%1.9	
	Dept. Manager	3		%1.1	
No. of IT Training Courses	None	15	260	%5.8	%100
	1	115		%44.2	
	2	78		%30	
	3	25		%9.6	
	More than 3	27		%10.4	

### *Validity*

Researchers applied the survey to a pilot sample of (30) employees from the study population. After collection, validity was calculated on used statements through calculation

of Pearson correlation coefficients between each statement with the main variable, and its correlation with the used dimension.

**Table 3:** *Validity of the Dimension (Use of IT)*

Ser.	Statement	Correlation with main Variable	Correlation with Dimension
1	Ministry uses IT to analyse different data	0.4053**	**0.5520
2	Ministry uses electronic and digital techniques to store and process data	0.6665**	**0.7431
3	Ministry uses software suitable to work nature and easy to use	0.6553**	**0.6666
4	Ministry uses modern communication systems like the internet and social media..etc	0.4921**	**0.5716
5	Ministry continuously tracks modern technical systems to cope with technological evolution	0.3540**	**0.4999
6	Employees have the basic competencies to deal with advanced IT and communication	0.6286**	**0.6780
7	Employees invest in the available IT in performing their tasks and missions	0.6656**	**0.6829

\*\* Significant at (0.01)

**Table 4:** *Validity of the Dimension (IT Infrastructure)*

Ser.	Statement	Correlation with main Variable	Correlation with Dimension
1	Available human competencies are capable of employing the different IT methods at work	0.2028**	0.3250**
2	Ministry makes effort to level up employees' competencies in using IT through conducting workshops	0.6799**	0.7414**
3	Ministry has MIS systems for all sections	0.6514**	0.6672**
4	Ministry has an internal network linking sections and employees with each other	0.5606**	0.6607**
5	Ministry has IT specialised technicians providing maintenance and technical support to employees	0.3900**	0.3126**
6	Ministry always updates its technology assets (programming and physical) to cope with new trends	0.6291**	0.6615**
7	Ministry has modern communication network to facilitate providing services to all society personnel and institutions	0.6821**	0.6671**

\*\* Significant at (0.01)

**Table 5:** *Validity of the Dimension (IT Systems)*

Ser.	Statement	Correlation with main Variable	Correlation with Dimension
1	Ministry uses IT and communication in planning, analysing and evaluating HR performance	0.4078**	0.4362**
2	Vacancies are announced and applications are submitted on the Ministry's e-mail account	0.4341**	0.6055**
3	Tests and interviews are conducted electronically	0.4052**	0.6709**
4	Employees are trained using different electronic training methods	0.4100**	0.5071**
5	HR practices are electronically linked to the electronic performance appraisal and incentives systems	0.4457**	0.5935**
6	Employees' services are managed electronically through employees' gates at the ministry's online site	0.6506**	0.6870**
7	Ministry's services are provided electronically to the community's individuals and institutions	0.4148**	0.5972**

\*\* Significant at (0.01)

**Table 6:** *Validity of the Variable (HR Performance Development)*

Ser.	Statement	Correlation with main Variable	Correlation with Dimension
1	IT helps employees gain different functional skills and increases their autonomy	0.4493**	0.5844**
2	We can benefit from the Ministry's electronic services related to distance learning and training	0.5913**	0.6783**
3	IT helps employees to access scientific journals and references related to their work	0.5214**	0.4761**
4	Online interactive visual conferences are used to enhance employees' performance and increase their expertise	0.3054**	0.3915**
5	Electronic teaching, training and guiding materials are available for employees at their Ministry's site gate	0.3266**	0.5767**
6	IT achieves the required flexibility of employees to meet the work demands	0.6002**	0.6357**
7	IT helps employees to achieve their tasks with high levels of quality and precision	0.6341**	0.5783**
8	Use of IT and communications stimulate innovation, initiation and creativity	0.4524**	0.5185**
9	Use of IT encourages employees to research and develop themselves	0.4216**	0.5668**
10	IT helps create many solutions to problems encountered by employees during their work	0.4258**	0.4651**
11	Ministry is keen on providing services to the community's individuals and institutions without the need to go to the ministry's facilities though the ministry's different electronic communication methods	0.5485**	0.5920**
12	The ministry uses IT to help enhance and diversify the employees' services provided to community's individuals and institutions	0.5088**	0.5396**
13	The ministry use of IT helps differentiation of the services provided by its employees from services provided by employees of other ministries	0.3417**	0.4832**
14	The ministry adopts a clear strategy in providing its services to community's individuals and institutions electronically	0.3955**	0.5029**
15	IT simplifies the admin procedures and increases the work speed	0.5984**	0.6744**

16	IT helps the emergence of specialty integrated work teams	0.5698**	0.5660**
17	IT increases the employees' capabilities to act in awkward situations	0.2592**	0.4117**
18	IT helps achievement of work on time and decreases effort	0.3305**	0.5674**
19	IT disseminates the ministerial information and decisions to the target parties wider and faster	0.6375**	0.6142**
20	IT contributes in increasing coordination among different admin units and operations within the ministry	0.5790**	0.5782**

\*\* Significant at (0.01)

### Reliability

**Table 7:** Cronbach alpha Calculation for IT and its Dimensions and HR Performance Development

Measure and Dimension	Cronbach alpha
Use of IT	0.687
IT Infrastructure	0.709
IT Systems	0.601
IT Total Measure	0.794
HR Performance Total Measure	0.802

### General Results of the Questionnaire

**Table 8:** Means, S.D. and Ranks of the Dimension (Use of IT)

Ser.	Statement	Mean	S.D.	Rank
1	Ministry uses IT to analyse different data	2.03	1.22	7
2	Ministry uses electronic and digital techniques to store and process data	3.23	1.36	2
3	Ministry uses software suitable to work nature that is easy to use	3.28	1.46	1
4	Ministry uses modern communication systems like the internet and social media etc.	3.06	1.41	3
5	Ministry continuously tracks modern technical systems to cope with technological evolution	2.87	1.45	6
6	Employees have the basic competencies to deal with advanced IT and communication	2.97	1.50	5
7	Employees invest in the available IT in performing their tasks and missions	3.04	1.33	4
General Mean		2.95		

**Table 9:** Means, S.D. and Ranks of the Dimension (IT Infrastructure)

Ser.	Statement	Mean	S.D.	Rank
1	Available human competencies are capable of employing the different IT methods at work	3.22	1.35	2
2	Ministry makes effort to level up employees' competencies in using IT through conducting workshops	3.32	1.47	1
3	Ministry has MIS systems for all sections	3.10	1.43	3
4	Ministry has an internal network linking sections and employees with each other	2.84	1.42	7
5	Ministry has IT specialised technicians providing maintenance and technical support to employees	2.97	1.51	6
6	Ministry always updates its technology assets (programming and physical) to cope with new trends	3.05	1.33	4
7	Ministry has modern communication network to facilitate providing services to all society personnel and institutions	2.98	1.40	5
General Mean		3.47		

**Table 10:** Means, S.D. and Ranks of the Dimension (IT Systems)

Ser.	Statement	Mean	S.D.	Rank
1	Ministry uses IT and communication in planning, analysing and evaluating HR performance	3.19	1.35	2
2	Vacancies are announced and applications are submitted on the Ministry's e-mail account	3.22	1.47	1
3	Tests and interviews are conducted electronically	3.03	1.42	4
4	Employees are trained using different electronic training methods	2.89	1.43	7
5	HR practices are electronically linked to the electronic performance appraisal and incentives systems	2.99	1.49	6
6	Employees' services are managed electronically through employees' gates at the ministry's online site	3.08	1.36	3
7	Ministry's services are provided electronically to the community's individuals and institutions	3.02	1.39	5
General Mean		3.06		

**Table 11:** Means, S.D. and Ranks of the Variable (HR Performance Development)

Ser.	Statement	Mean	S.D.	Rank
1	IT helps employees gain the different functional skills and increases their autonomy	3.21	1.37	4
2	Employees can benefit from the Ministry's electronic services related to distance learning and training	3.01	1.39	12
3	IT helps employees to access scientific journals and references related to their work	3.03	1.40	10
4	Online interactive visual conferences are used to enhance employees' performance and increase their expertise	2.52	1.43	17
5	Electronic teaching, training and guiding materials are available for employees at their Ministry's site gate	2.98	1.50	15
6	IT achieves the required flexibility of employees to meet work demands	3.03	1.40	10
7	IT helps employees to achieve their tasks with high levels of quality and precision	2.99	1.38	14
8	Use of IT and communication stimulates innovation, initiation and creativity.	3.14	1.38	6
9	Use of IT encourages employees to research and develop themselves	3.22	1.46	3
10	IT helps create many solutions to problems encountered by employees during their work	3.25	1.46	2
11	Ministry is keen on providing services to the community's individuals and institutions without the need to go to the ministry's facilities though the ministry's different electronic communication methods	3.05	1.44	8
12	The ministry use of IT helps enhance and diversify the employees' services provided to community's individuals and institutions	3.02	1.48	11
13	The ministry use of IT helps differentiation of the services provided by its employees from services provided by employees of other ministries	3.01	1.36	12
14	The ministry adopts a clear strategy in providing its services to community's individuals and institutions electronically	3.18	1.37	5
15	IT simplifies the admin procedures and increases the work speed	3.26	1.45	1

16	IT helps the emergence of specialty integrated work teams	3.06	1.42	7
17	IT increases the employees' capabilities to act in awkward situations	3.04	1.43	9
18	IT helps achievement of work on time and decreases effort	2.97	1.50	16
19	IT disseminates the ministerial information and decisions to the target parties wider and faster	3.03	1.35	10
20	IT contributes in increasing coordination among different administrative units and operations within the ministry	3.00	1.40	13
General Mean		3.06		

To verify the effects of Information Technology on human resource performance development, multiple regressions were conducted to test the effects of IT on the development of human resource performance.

**Table 12:** Simple Regression Results to Test the Effect of IT Systems on HR Performance Development

Variance Source	Freedom	R	R <sup>2</sup>	F-Value	Sig. Level
Among Groups	3	0.652	0.425	63.119	0.01
Within Groups	376				
Total	379				

To verify the effects of the use of IT dimensions on human resource performance development, simple and multiple regressions were conducted to test the effect of each one on the development of human resource performance.

**Table 13:** Simple Regression Results to Test the Effect of Use of IT on HR Performance Development

Variance Source	Freedom	R	R <sup>2</sup>	F-Value	Sig. Level
Among Groups	1	0.624	0.390	165.235	0.01
Within Groups	258				
Total	259				

To verify the effect of the IT infrastructure dimension on human resource performance development, simple and multiple regressions were conducted to test the effect of each one on the development of human resource performance.

**Table 14:** *Simple Regression Results to Test the Effect of IT Infrastructure on HR Performance Development*

Variance Source	Freedom	R	R <sup>2</sup>	F-Value	Sig. Level
Among Groups	1	0.619	0.383	160.419	0.01
Within Groups	258				
Total	259				

To verify the effect of the IT systems dimension on human resource performance development, simple and multiple regressions were conducted to test the effect of each one on the development of human resource performance.

**Table 15:** *Simple Regression Results to Test the Effect of IT Systems on HR Performance Development*

Variance Source	Freedom	R	R <sup>2</sup>	F-Value	Sig. Level
Among Groups	1	0.442	0.195	62.730	0.01
Within Groups	258				
Total	259				

## Discussion

Table (2) shows that 60.04% of the sample was female and the rest were male. This is attributed to the number of female workers at the ministry, and their care to respond to the survey.

It also shows that 36.5% are young men and women (30 and less), which indicates the ministry's adherence to hiring fresh graduates to cope with IT development in the work place. It also reveals that 58.9% are 31-35, which indicates that the ministry is keen on retaining a high rate of its human resources that got used to working at the ministry and who possess the skills and expertise required to perform their jobs. On the other hand, we find those between 41 and 48 were only 4.6%, which is a positive indicator from the perspective of IT use.

The table also demonstrates that the rate of employees with a diploma represents 46.5%, B.Sc. 50.4% and graduate studies 3.1%. This indicates the variety of employees' qualifications to include master and doctorate degrees to make use of their educational qualifications, and how it motivates other employees to continue their educations to the highest levels.

The table also demonstrates that the highest rate of experience duration was (6-10) which was 36.9%, which means that the ministry is keen on retaining those employees with high levels of experience to make use of them for knowledge transfer.

We can see that 90.8% of the sample size is from the executive level of human resources, which reflects the nature of the community service organisations within the Middle East.

The aspect that drew our attention in this table is the the degree of those who attended one and two training courses about the use and employment of IT was 74.2% and those who attended three courses and more was 20%. This indicates how keen the ministry is to train and develop its human resources regarding IT usage and application, which has its effect on the development of their performance.

Table (3) shows that all correlation coefficients are significant at (0.01), which makes them valid and achieves the structural validity of the dimension, and hence all statements are valid to measure the study objectives.

Table (4) shows that all correlation coefficients are significant at (0.01), which makes them valid and achieves the structural validity of the dimension, and hence all statements are valid to measure the study objectives.

Table (5) shows that all correlation coefficients are significant at (0.01), which makes them valid and achieves the structural validity of the dimension, and hence all statements are valid to measure the study objectives.

Table (6) shows that all correlation coefficients are significant at (0.01), which makes them valid and achieves the structural validity of the dimension, and hence all statements are valid to measure the study objectives.

Table (7) shows that the given values are high and exceed (0.5), which assures that the statements have a high reliability, meaning they are stable over time. Hence, we are sure the survey is ready in its final form to be distributed on the sample.

Table (8) reveals that the general mean of the statements of the IT dimension of (use of IT) is 2.95, showing that the sample response was medium in general, based on the researchers' scale, as it averaged between 2.03 and 3.28.

Table (9) reveals that the general mean of the statements of the IT dimension of (IT Infrastructure) is 3.47, showing that the sample response was (to some extent) in general based on the researchers' scale, as it averaged between 2.84 and 3.32.

Table (10) reveals that the general mean of the statements of the IT dimension of (IT Systems) is 3.06, showing that the sample response was (to some extent) in general based on the researchers' scale, as it averaged between 2.89 and 3.22

Table (11) reveals that the general mean of the statements of the Variable (HR Performance Development) is 3.06, showing that the sample response was (to some extent) in general based on the researchers' scale, as it averaged between 2.52 and 3.26.

The correlation matrix showed a positive correlation between IT and human resource performance development at the studied ministry at significance level (0.01), as the total Pearson coefficient was (0.6461), which means that the more IT is activated at the ministry, the more it affects the employees' performance.

Table (12) simple regression shows that there is a statistical effect of Information Technology on human resource performance development at the ministry at significance level (0.01) as the F value is (63.119), and correlation coefficient is (0.652). Hence, we may say that the Information Technology explains 42.5% of HR performance development based on ( $R^2 = 0.425$ ), and we accept hypothesis  $H_1$ , which agrees with the results of Rais (2016), Strasser (2014), Saudi (2016), Al Fawzan (2014), Mabrouk (2017) and Ramadan (2011).

Table (13) simple regression shows that there is a statistical effect for use of IT on human resource performance development at the ministry at significance level (0.01) as the F value is (165.235), and correlation coefficient is (0.624). Hence, we may say that the use of IT explains 39% of HR performance development based on ( $R^2 = 0.390$ ), and we accept hypothesis  $H_2$ , which agrees with the results of Raise (2016), Saudi (2016), Al Fawzan (2014), Strasser (2014) and Al Azzam (2014).

Table (14) simple regression shows that there is a statistical effect for use of IT on human resource performance development at the ministry at significance level (0.01) as the F value is (160.419), and correlation coefficient is (0.619). Hence, we may say that the IT Infrastructure explains% 38.3% of HR performance development based on ( $R^2 = 0.383$ ), and we accept hypothesis  $H_3$ , which agrees with the results of Ammar (2015), Saudi (2016) and Al Azzam (2014).

Table (15) simple regression shows that there is a statistical effect for use of IT on human resource performance development at the ministry at significance level (0.01) as the F value is (62.730), and correlation coefficient is (0.442). Hence, we may say that the IT Systems explains 19.9% of HR performance development based on ( $R^2 = 0.195$ ), and we accept hypothesis  $H_4$ , which agrees with the results of Mabrouk (2017) and Ramadan (2011).

## **Conclusion**

The study is of great significance to the governmental organisations in the Kingdom of Bahrain as it highlights the substantial impact of information technology and the important role it plays in developing and enhancing the performance of human resources within such organisations, and the different dimensions that should be considered by managers in applying information technology within such organisations.

Thanks to the revolution in information technology, the shape of the contemporary workplace has changed and systems have been made more efficient and effective through introducing new techniques. The majority of the organisations have now apprehended the importance of information technology and adoption of its applications for the development of organisational and individual performance.

This paper investigates the contribution of information technology in developing the human resource performance. We found out that IT has a significant effect on the efficiency of human resources. Traditional human resource performance in general was complicated and slow, especially in the no profit organisations such as the one with which this study is concerned. The use of IT and its integration in HRM have had divergent results on organisational and individual performance.

The study has provided empirical evidence that the adoption of IT, with its three dimensions of use of IT, IT infrastructure and IT systems, has a positive effect on the development of human resource performance in the Ministry of Labor and Social Development, based on the collected data analysis from the employees. This paper proved a positive statistical correlation between dimensions of IT and development of human resource performance at the Ministry of Labor and Social Development in Bahrain. The more they invest in all IT dimensions based on scientific methods, the greater the positive effect on the ministry's human resource performance. This is attributed to the Ministry's effective employment of information technology in accordance with the international criteria, which agrees with the results of other studies that addressed the relationship between information technology and human resource performance development, such as Raise (2016), Saudi (2016), Al Fawzan (2014), Strasser (2014), Al Azzam (2014) and others.

## **Limitations of the Study and Directions for Future Research**

The researchers wish they had had more time to investigate the research problem before and after and measure the changes to the employees' performance that occurred due to the application of information technology in the study organisation, but time limitations restricted that.



As this study dealt with the dimensions of the use of IT, IT infrastructure and IT systems and their effects on the development of HR performance, which hinders the generalisation of results, we recommend that other dimensions of information technology be used instead, so that the scope of study could be extended to include HR variables, organisational performance, corporate culture and so on. Furthermore, as the study was applied to a governmental service organisation, further studies could work on production organisations to see the discrepancies and similarities of results concerning the effects in both sectors.

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