西南交通大学学报

第 54 卷 第 4 期
2019 年 8 月

JOURNAL OF SOUTHWEST JIAOTONG UNIVERSITY

Vol.54 No.4
Aug. 2019

ISSN - 0258-2724

DOI：10.35741/issn.0258-2724.54.4.2

Research article

Computer Science

# THE EFFECT OF NOT USING INTERNET OF THINGS IN CRITICAL LIFE SITUATIONS IN THE HEALTH FIELD AND THE EFFECT ON IRAQI PROFITABILITY: EMPIRICAL STUDY IN BASRA

**Hisham Noori Hussain Al-Hashimy[1,*], Alaa Khalaf Hamoud[2], Fatima Alaa Hussain [3]**

[1]Computer Information System Department,
University of Basrah, Basrah, Iraq, hisham1985130@gmail.com
[2] Computer Information System Department,
University of Basrah, Basrah, Iraq, alaa.hamoud@uobasrah.edu.iq
[3] Computer Information System Department, fatima97alaa@gmail.com.
University of Basrah, Basrah, Iraq,

**Abstract**

Internet of things (IOT) is an emerging field in Iraq that has gained research interest. One of its most important aspects concerns how to bind IOT to enhance healthcare in Iraq. This study was conducted at the College of Computer Science and Information Technology. It discussed the effect of not using IOT to manage critical life-threatening situations in Iraqi healthcare. In this study, we considered IOT technology, particularly the DRONE ambulance, using real data collected via a random questionnaire study in Basra. The data was analyzed using SPSS version 0.23. At the end of the study, we identified the factors that could have affected the use of IOT technology: awareness, security, cost, governmental support, collaboration, and professional behavior. The results showed that collaboration affected the use of IOT technology.

**Keywords:** IOT, Drone Ambulance, Healthcare, Dependent Variables, Independent Variables, SPSS.

**摘要：**物联网（IOT）是伊拉克新兴领域，已引起研究兴趣。其中一个最重要的方面涉及如何约束物联网以加强伊拉克的医疗保健。该研究在计算机科学与信息技术学院进行。它讨论了不使用物联网管理伊拉克医疗保健中危及生命的危急情况的影响。在这项研究中，我们使用通过巴士拉随机问卷调查收集的真实数据，考虑了物联网技术，特别是 DRONE 救护车。使用 SPSS 版本 0.23 分析数据。在研究结束时，我们确定了可能影响物联网技术使用的因素：意识，安全性，成本，政府支持，协作和专业行为。结果表明，协作影响了物联网技术的使用。

**关键词:** 物联网，无人驾驶救护车，医疗保健，依赖变量，独立变量，SPSS

# I. INTRODUCTION

The term “internet of things” (IOT) represents the general concept of network devices’ capacity to sense and collect data then share that data across the internet, where it can be processed and utilized for various interesting purposes. In addition, IOT includes protocols, software, and communication technologies that allow these things to communicate and interact and exchange data and orders without human intervention [1]. Where the internet of things is the new wave invading the world, the internet has shifted from connecting a person to a device to the possibility of connecting a device to other devices with the prospect of data exchange between them [2]. The field of HealthCare in practical which is determined by the plane of the DRONE ambulance (which is an ambulance aircraft for dangerous situation in the locations and cases that the ambulance cannot do with the same efficiency) [3]. Many techniques and strategies are used to enhance healthcare progress, such as Cloud [4], [5], [6]. Analytical processing (OLAP) [7], [8], Fuzzy inference [9], and data mining [10], as well as IOT [11], [12] are applied for these purposes. Due to its critical nature, the field of healthcare needs new emerging techniques and tools. Use of IOT in the healthcare field has increased, since IOT provides integrity on all connected smart devices, diagnoses failure, and includes a tracking component [13].

When talking about the lack of similar technology in Iraq, we need to take into consideration the widespread use of these techniques [14], [15], [16]. This research is conducted to ascertain the reasons for the absence of these techniques in Iraq, and to try to study the reasons and propose solutions.

## II. LITERATURE REVIEW

The Internet of Things (IOT) has been evolving rapidly, making it possible to connect multiple smart devices over the Internet, which provides more interoperability for application purposes. Recent research shows more potential applications of IOT in industrial sectors that require extensive information, such as healthcare services (i.e. Drone and other Internet-based systems for emergency medical services). Such applications demonstrate that data is collected, integrated and operated flexibly to support emergency medical services. The result shows that access to data on Internet technology is timely and comprehensive in the cloud and on mobile computing platforms [17].

Currently, the concept of the Internet has become more sophisticated, extending beyond device communication and relying on specific protocols, platforms and special software.

The Internet is the third generation of information development, as it relies on cloud computing and self-storage, in addition to high-security algorithms which ensure data security and the accuracy required from devices connected to the Internet through this technology [3]. IOT is one of the most important technologies of our time. As the most developed and widespread in the world, it must be available in all countries because of the great benefit that humanity derives from this type of technology. Saving time and energy and ensuring the accuracy of work are some of the most important reasons for development [18] [19]. Integration with the Internet requires a new set of building blocks that will enable the actualization of this type of technology. Using this type of technology reduces the cost of all types of global transactions and real global virtualization, providing low-cost, high-resolution data management systems around the world [20].

The use of these tremendous advances in Internet technologies (IOT) [21] has led to the development of a wide range of medical functions, such as real-time monitoring, patient information management, health care management, and body sensor network (BSN). The patient's condition can be monitored through a range of wireless sensors that are small and lightweight [22].

### A. Research Variables

There are six important research variables that will be studied: awareness, security, cost, governmentsupport, professional behavior, and collaboration. These variables will be studied.

1. Awareness

When using (Internet of things) in Iraqi institutions, these institutions must spread awareness among members of the Iraqi people to be able to use this technology easily and benefit from it [23]. This system has been designed to be easily expanded and used for other internet technologies and to assess its effectiveness and public awareness [24]. In Iraq, the awareness of modern technologies such as the "Internet of Things (IOT)” is not considering the country’s economic, political and security situation [21]. There are some IOT applications in health, but it is difficult for people to use them because they do

not know how to deal with these techniques because of lack of awareness of how to use them.

2. Security

The most important feature of the IOT is that it is based on heterogeneous technologies that are compatible with the provision of innovative services in different areas of application. IOT it can support and meet security and privacy requirements. These requirements include data confidentiality and authentication, access control within the Internet, privacy, trust between users and objects, and enforcement of security and privacy policies [25]. This paper will analyze the security problems with use of the IOT in Iraq [26].

3. Cost

Is an important factor when considering the reasons for the lack of such techniques in Iraq Given the current situation, we must study the possibility of providing the cost of similar techniques and of providing material support to maintain these technologies when needed. Companies receive advantages by using information technology, particularly IOT technologies, to enhance intangible and integrated human and business resources, such as supplier relationships [27].

4. Government Support

The government subsidy factor is one of the most important considerations. The government's support for specific technology and its introduction into governmental departments can officially eliminate the obstacles that cause the lack of use of the IOT in Iraq. The IOT is a technological and economic driver at the state and the world level in the information industry. The exchange of this information is consistent with internationally agreed protocols. Therefore, this type of technology cannot be used without government support and approval of the protocols on which it operates [28].

5. Professional Behavior

The behavior of people who will have direct or indirect interaction with technology is an important and affects the availability of technology. Where the behavior of specialists, whether in medicine, administration, or other fields, deals with modern techniques, it can be said that professionals prefer to solve the problems they face through learning by experience and helping each other. Faced with the challenges of their work, they rely less on fixed formats that are not subject to discussion and more on the type of improvisation used in practice. Studies have also shown that the practice of working and learning through it is an attempt to demonstrate how the action of "thinking work" can enhance this creativity and accuracy for current or future professionals [29].

6. Collaboration

When discussing the cooperation of medical staff and ordinary citizens to complete the work of this technique, we certainly see its importance and the extent of its impact on the success of IOT technology. The use of technology is not neutral in its effects. The problems relate to ownership of knowledge, overload of information, quality control, and interpretations related to the use of mobile devices in the workplace, together with some other matters that cause reservations now that technology is known to have an impact on the diffusion of knowledge and medical cooperation. Empirical and theoretical evidence shows how technology has a clear potential to contribute to both access and sharing of knowledge, but there is a need for more research that applies theoretical frameworks to analyze the impact of technology on learning and participation in the workplace [30].

It visions equipped with sensors to monitor and analyze the patient's state and analysis but does not take into account many of the patient's real-time health measurements such as temperature, heart rate, and heartbeat. The doctor evaluates these vital signs when they are transferred to the ambulance. This information is then sent to the specialist doctor, and this helps the doctor to assess the situation better—cooperation between the doctor and this technology in order to save the patient's life [31].

## B. The Literature Review

The literature review table shows the results conducted from researches based on six dependent variables as shown in Table 1.

Table 1.
Result of Dependent and Independent Variables

| No. | Citation | Dependent variable | Independent Variable | |
|---|---|---|---|---|
| 1 | [32] ( Guo, | Awareness | IOT | All physical objects can be linked to building a global |

| | | | | |
|---|---|---|---|---|
| | Zhang, Wang, Yu, & Zhou, 2013) | | | infrastructure-based Internetusing the IOT technology. Based on hardware-specificnetworks which has become a global wave cannot be dispensed with the realization of most people in general. |
| 2 | [33] (Myslinski, 2017) | Security | IOT | The fact-finding technology provides network information and analysis, determines the actual accuracy of the information, compares the information received with the source information, automatically monitors and processes the information, to ensure the ability to perform the required task in conjunction with the security system |
| 3 | [34] (Gozalvez, 2016) | Cost | IOT | The third generation technology is the decision to standardize IoT, a new radio technology to respond to Internet requirements. As the new technology reduces the constraints of use by providing low cost of devices compared with the services it provides, to help spread technology within the larger scope, using resource blocks |
| 4 | [31] (Krishna et al., 2018) | Collaboration | IOT | After assessing the situation and including information, the values of these basic parameters are transferred from the ambulance. And then send it to the specialist doctor and this helps the doctor to assess the situation better and therefore cooperation between the doctor and this technology in order to save the life of the person |
| 5 | [35] (Eccles, Grimshaw, Walker, Johnston, & Pitts, 2005) | Professional Behavior | IOT | Professionals collaborate and conduct interventions to improve the use of research results, techniques and tools by individual health care professionals or teams. |
| 6 | [36] (Perez & Soete, 1988) | Government support | IOT | When providing government support for any type of technology, it is sufficient reason to cancel all obstacles to using this technology or at least give it an opportunity to be present in the country |

## III. METHODOLOGY

The work and application of the research will be defined in terms of the collection method and the process of collecting the necessary data, in addition to determining the source of what is known as the study sample and the type of data on which the study depends. The effect of variables is measured for two parts of the research (the IOT and vital signs in critical situations). Thus, we have reliable results in analyzing the variables of research and studying the possibility of their effective application.

This research is a quantitative approach, using a specific questionnaire adapted from other work. The research population includes all files like Lecturers, doctors, nurses, computer engineers, programmers, and others. We have 100 respondents as a sample of this study after distributing the questionnaire to the persons within the above mentioned competencies. Data analysis will be conducted using SPSS version 0.23.

Table 2.
Questionnaire Parts

| **Part 1** | |
|---|---|
| **Constructs** | **Number of items** |
| General responds questions | 6 |
| **Part 2** | |
| **Constructs** | **Number of items** |
| Awareness | 4 |
| Security | 4 |
| Collaboration | 4 |
| Cost | 4 |
| Professional behavior | 4 |
| **Part 3** | |
| **Constructs** | **Number of items** |
| IOT | 4 |
| **Part 4** | |
| **Constructs** | **Number of items** |
| Government support | 4 |

The data will be gathered using the questionnaire approach. The questionnaire consists of four major parts, as shown Table 2.

## IV. RESEARCH FINDINGS

This technical report presents the findings of this research, which employeddescriptive analysis.The descriptive information of the respondents, such as their gender, age, and educational level, was used in conjunction with the descriptive analysis to find the descriptive information of the variables. In addition, this report presents the reliability test (Test reliablility refers to the degree to which a test is consistent and stable in measuring what it is intended to measure. Most simply put, a test is reliable if it is consistent within itself and across time. To understand the basics of test reliability, think of a bathroom scale that gave you drastically different

readings every time you stepped on it regardless of whether your had gained or lost weight. If such a scale existed, it would be considered not reliable). And the internal consistency between the items was also measured. Finally, correlation analysis (The Correlation Analysis is the statistical tool used to study the closeness of the relationship between two or more variables. The variables are said to be correlated when the movement of one variable is accompanied by the movement of another variable). And hypotheses testing (Hypothesis testing is an act in statistics whereby an analyst tests an assumption regarding a population parameter. The methodology employed by the analyst depends on the nature of the data used and the reason for the analysis. Hypothesis testing is used to infer the result of a hypothesis performed on sample data from a larger population) was performed using regression analysis (the use of mathematical and statistical techniques to estimate one variable from another especially by the application of regression coefficients, regression curves, regression equations, or regression lines to empirical data).

**A. Descriptive Information of the Respondents**

Figure 1presents the Dependent and Independent Variables of respondents according to demographic information. As the figure indicates, the respondents filled all of the fields (Interest in Technology, Computer Skills, Age, and Gender) except Job information, which is missing from 16% percent of all respondents. The following sections present and discuss the detailed demographic information of the respondents.

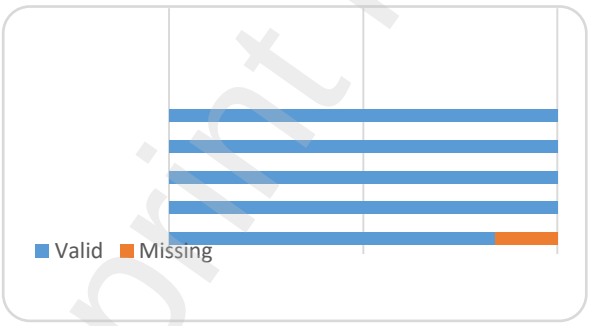


Figure 1. Respondents Statistics

1. Gender of Respondents

The gender of the total number of respondents (100) are presented in Figure 2,which revealed 72 (61.0%) of the respondents was males and 28 (39%) was females. It can be seen that the percentage of males is higher than the females because the percentage of working males in Iraq is more than the number of working females, This is a normal proportion as Iraq is a country where the proportion of male workers more than females for religious matters.

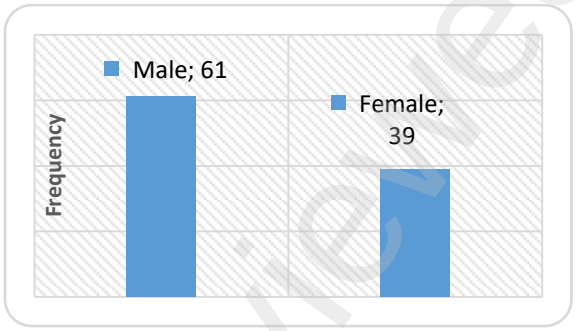


Figure 2. Gender of the Respondents

2. Age of Respondents

Figure 3 depicts the information about the age of the respondents, which indicates that 30% were in the age group between 20 and 29 years, 39% were in the age group of 30 and 39 years, 15% were in the age group of 40 and 49 years, and 16% were in the age group of 50+ years. It is worth noting that most of the respondentswere over the age of 30.This is likely due to the higher level of maturity, learning, and academic achievement.

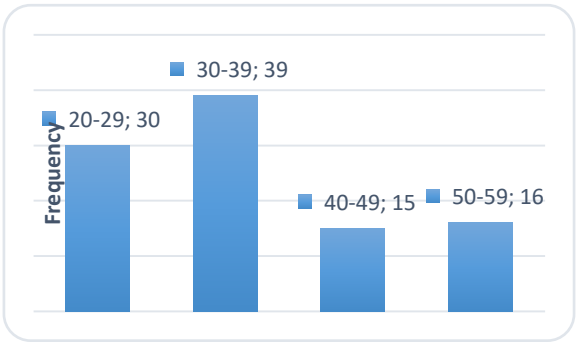


Figure 3.Age of the Respondents

3. Educational Level

Figure 4 depicts the education level of the respondents, which indicates that 24% of the respondents were lecturers, 17% were doctors, 12% are nurses, 12% are computer engineers,and 19% are pro computer science or information technology field.

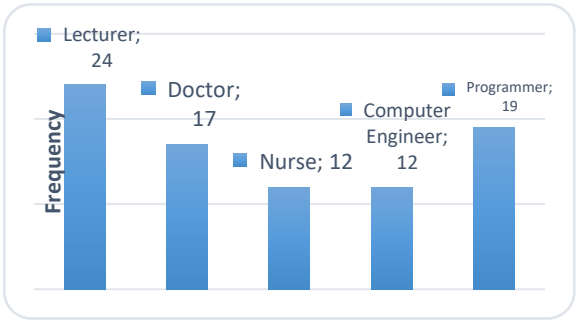


Figure 4. Educational Level of the Respondents

4. Skills

Figure 5 depicts the skills of the respondents, which indicates that 2.0% of the respondents had no skills, 26% of the respondent's had beginner skills, 47% of the respondents had medium skills, and 25% of the respondents had advanced skills. It is important tonote that the majority of respondents have sufficient skills due to their level of scientific expertise and specialization.

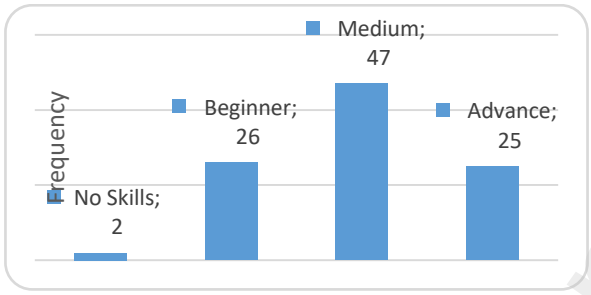


Figure 5. Computer Skills of the Respondents

5. Interest

Figure 6 depicts howrespondents evaluate the respondents' interest in looking at new technologies in their field of work. As shown in the figure, 54% of the respondents were interested, 41%of the respondents were very interested, and 5%of the respondents were not interested.

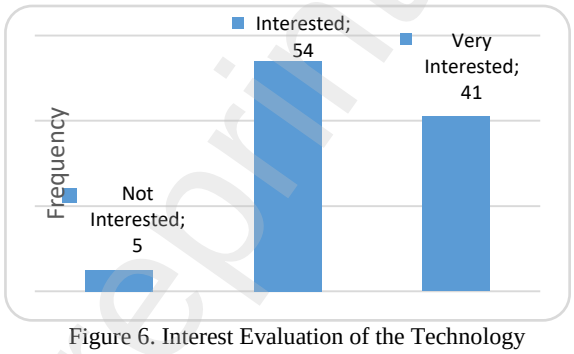


Figure 6. Interest Evaluation of the Technology

## B. Descriptive Information of the Variables

The interpretation of the mean score value of the study's variables are presented in Table 3, which indicates the respondents' level of agreement (i.e.,their perception) regarding the variables of the study. The table and the interpretation are adopted from [37].

Table 3.
Mean Score Interpretation.

| Mean score | Interpretation |
|---|---|
| 1.00 – 1.80 | Strongly Disagree (SD) |
| 1.81- 2.60 | Disagree (D) |
| 2.61- 3.40 | Moderate Agree (MA) |
| 3.41-4.20 | Agree (A) |
| 4.21-5.00 | Strongly Agree (SA) |

1. Awareness

Table 4 summarizes the overall mean score value of the variables' objectivity,Business dictionary defines objectivity in accounting field as accountant's reliance on verifiable evidence in the measurement of financial results. Objectivity makes it possible to compare financial statements of different firms with an assurance of reliability and uniformity. As shown in the table, the respondents are divided between moderate agreement, disagreement and strong disagreementfor each of the statements.

Table 4.
Awareness Variables

| Variable | N | Mean | Status |
|---|---|---|---|
| The individuals have enough information about using the DRONE in health field in general | 100 | 2.70 | MA |
| The training and induction courses to develop people's abilities to deal with similar techniques are good enough | 100 | 2.33 | D |
| Do you think that increasing awareness in this area leads to increased use of IOT | 100 | 1.95 | D |
| Technical awareness of this area affects the possibility of using the IOT | 100 | 1.76 | SD |
| Valid N (list wise) | 100 | | |

2. Security

Table 5 summarizes the overall mean score value of the variables' objectivity, which shows that the respondents are divided between moderate agreement and disagreement on the items for each of the statements.

Table 5.
Security Variable

| Variable | N | Mean | Status |
|---|---|---|---|
| Do you think that using Internet of things technology will keep users safe and confidential? | 100 | 2.10 | D |
| The use of IOT technology affects the security of government information and the possibility of breach | 100 | 2.97 | MA |

| | | | |
|---|---|---|---|
| Does the use of IOT technology affect the foreign policy of the state | 100 | 3.35 | MA |
| Do you think that sending the DRONE to all the cases you require is safe | 100 | 3.05 | MA |
| Valid N (list wise) | 100 | | |

3. Collaboration

Table 6 summarizes the overall mean score value of the variables, which indicates that the respondents are divided between disagreement and strongly disagreement on the statements in the list.

Table 6.
Collaboration Variable

| Variable | N | Mean | Status |
|---|---|---|---|
| DRONE is expected to contribute to strengthening the cooperation between the physician and the medic in providing the appropriate medical service to the patient | 100 | 1.89 | SD |
| Is the level of assistance and support to encourage the use of DRONE good? | 100 | 2.86 | D |
| The Iraqi citizens of the general public have the spirit of cooperation to use such techniques | 100 | 2.27 | D |
| I think that the cooperation between the paramedic and the guide doctor who is connected during the DRON, which contributes to saving a person's life greatly | 100 | 2.27 | D |
| Valid N (list wise) | 100 | | |

4. Cost

The overall mean score value of the variables objectivity is presented in the table shows that the respondents are divided between moderate agreements, disagreement and agree on the items of statement.

Table 7.
Cost Variable

| Variable | N | Mean | Status |
|---|---|---|---|
| I think a technique of this kind needs a high cost | 100 | 2.46 | D |
| when you think about the type of services that are provided by the DRONE compared to the cost you need, we will find the type of services suitable | 100 | 2.35 | D |
| The use of this type of technology is an additional expense that negatively affects the general budget of the Iraqi state | 100 | 3.41 | A |
| The use of such technologies is an effective contribution to reducing public expenditures | 100 | 3.12 | MA |
| Valid N (list wise) | 100 | | |

5. Behavior

The overall mean score value of the variables objectivity is presented in the table shows that the respondents are all disagreement and strongly disagree on the items of statement.

Table 8.
Behavior Variable

| Variable | N | Mean | Status |
|---|---|---|---|
| I think the use of DRONE affects the quality of care provided to the patient | 100 | 1.94 | D |
| Do you think that the medical staff contributes to improving the service provided to the patient using these new technologies? | 100 | 2.16 | D |
| The use of such techniques provides a high limit of professionalism in dealing with critical situations | 100 | 2.58 | D |
| The use of this type of technology reduces potential error rates | 100 | 2.51 | D |
| Valid N (list wise) | 100 | | |

6. IOT

The overall mean score value of the variables objectivity is presented in the table shows that the respondents are divided between disagreements and strongly disagree on the items of statement.

Table 9.
IOT Variable

| Variable | N | Mean | Status |
|---|---|---|---|
| Internet of things is a technology breakthrough to facilitate the lives of users | 100 | 1.76 | SD |
| Easy to use when needed | 100 | 2.35 | D |
| The instructions given by the DRONE make me make decisions that save the patient's life quickly | 100 | 2.50 | D |
| The services offered by the DRONE can contribute to saving a person's life | 100 | 2.14 | D |
| Valid N (list wise) | 100 | | |

7. Support

The overall mean score value of the variables objectivity is presented in the table shows that the respondents are divided between moderate agreements and disagreement on the items of statement.

Table 10.
Support Variable

| Variable | N | Mean | Status |
|---|---|---|---|
| When thinking about the quality of services provided to help with the use of DRONE (technical support, training on use) we find the quality of support good | 100 | 2.72 | MA |
| find that the material support in terms of providing hardware and software is available for such technologies | 100 | 3.00 | MA |

| | | | |
|---|---|---|---|
| Government support for such technologies contributes to the facilitation of social and economic life | 100 | 2.19 | D |
| Lack of government support negatively affects the use of such technologies | 100 | 2.21 | D |
| Valid N (list wise) | 100 | | |

## C. Reliability Analysis

The Cronbach's Alpha is one of the most widely used tools to assess the reliability of a measurement [38]. A value greater than 0.70 indicates that the measurement is reliable. However, a value less than 0.70 could lead to a conclusion that the measurement is questionable. Table11 shows the result of reliability analysis.

Table 11.
Reliability Analysis Result

| Variable | No of items | Cronbach's Alpha |
|---|---|---|
| Awareness | 4 | 0.217 |
| Security | 4 | 0.285 |
| Collaboration | 4 | 0.649 |
| Cost | 4 | 0.299 |
| Behavior | 4 | 0.717 |
| IOT | 4 | 0.182 |
| Support | 4 | 0.487 |

As result, we have the (Behavior, Collaboration) as a significant variable because of the value of Cronbach's Alpha. The overall research reliability for all respondents with 0 excluded cases is shown in table (12). List wise deletion based on all variables in the procedure. Since the coefficient of alpha is equal to (.763) that it is a confidante of high reliability for research in general.

Table 12.
Reliability Statistics

| Cronbach's Alpha | N of Items |
|---|---|
| 0.763 | 28 |

## D. Hypotheses Testing

This section presents the hypotheses testing. First, the correlations between the variables are tested using Pearson correlation to ensure that the multi collinearity does not occur. Next, the study tests the hypotheses using regression analysis. Pallant [39] argued that Pearson correlation is for regression analysis. The regression analysis is shown in Table 13.

Table 13.
Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.334[a] | 0.111 | 0.102 | 1.128 |
| 2 | 0.432[b] | 0.187 | 0.170 | 1.084 |
| 3 | 0.490[c] | 0.240 | 0.217 | 1.053 |
| 4 | 0.559[d] | 0.312 | 0.283 | 1.008 |
| 5 | 0.544[e] | 0.296 | 0.274 | 1.014 |
| 6 | 0.589[f] | 0.347 | 0.320 | 0.982 |

The hypotheses are tested using regression analysis. The analysis is based on sig (p-value) less than 0.05 indicate that the relationship between two variables is significant. Thus, the related hypothesis could be accepted. Table 14 shows the coefficient.

Table 14.
Hypotheses Testing

| Model | Unstandardized Coefficients | | Sig. |
|---|---|---|---|
| | B | Std. Error | |
| **Awareness** | 0.370 | 1.128 | 0.001 |
| **Security** | 0.836 | 1.084 | 0.024 |
| **Collaboration** | 0.208 | 1.053 | 0.011 |
| **Cost** | 0.255 | 1.008 | 0.008 |
| **Behavior** | 0.147 | 1.014 | 0.133 |
| **Support** | 0.336 | 0.982 | 0.001 |

Table 15. Summary of Hypotheses Testing

| No. | Statement | P-value | Status |
|---|---|---|---|
| 1 | There is a relationship between Awareness and (IOT) | 0.001 | supported |
| 2 | There is a relationship between security and (IOT) | 0.024 | supported |
| 3 | There is a relationship between Cost and (IOT) | 0.011 | supported |
| 4 | There is a relationship between Government support and (IOT) | 0.001 | supported |
| 5 | There is a relationship between collaboration and (IOT) | 0.011 | supported |
| 6 | There is a relationship between Professional behavior and (IOT) | 0.133 | supported |

This study has tested six hypotheses. A summary of the findings is presented in table 15. In this, the most important results were presented with regard to 100 responses by several people in different fields. The results that the most important variables that can be adopted are (Collaboration and Behavior).

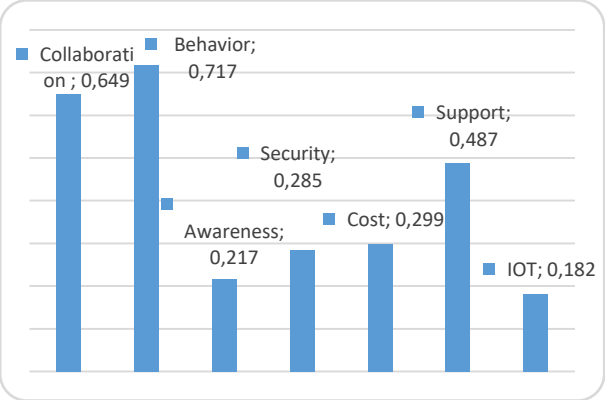


Figure 7. Variables Importance Measure

## V. CONCLUSION AND FUTURE WORKS

In this section, the concluded points will be listed based on results conducted from the study. The seven variables (awareness, security, cost, behavior, collaboration, IOT, government support) will be discussed and a list of future works will be present.

As the technology around us is developing, it's important to keep up with this technology. When talking about technology we mean the internet of things specially the DRONE Ambulance Through several focus sessions and interviews I convened drone experts, medical staff and professionals from different fields in numerous brainstorms to explore this topic. The goal was defined to create a high speed response to the critical life situation to provide faster response which mean save a life. So in this research we are working on the reasons of the lack of using similar technology.

This research discusses the factors of the lack of use for the IOT technology in general and the DRONE ambulance as example for that technology we have a seven variables which are (Awareness, security, cost, behavior, collaboration, IOT, government support).

Based on this research result we found that Iraq's need to be done by series of steps which must involve considering the variables effect it (reasons of the lack) as shown in Table 16.

Table 17.
List of Future Work

| Topic | Technique | Source |
|---|---|---|
| Awareness | Publish the technology and make people familiar with it | Literature review of this study |
| Collaboration | Make training courses | Literature review of this study |
| Behavior | Construct people about the technology | Literature review of this study |

## REFERENCES

[1] ALAMERI, I.A. (2018).MANETS and Internet of Things System: A Development of Data Routing Algorithm.*Engineering, Technology & Applied Science Research*, 8(1), pp. 2604-2608.

[2] ILIC, A. and FLEISCH, E. (2016). *Augmented Reality and the Internet of Things.* (Auto-ID Labs White Paper, No. BIZAPP-068). Zurich, Switzerland: Auto-ID Labs ETH / HSG.

[3] TAO, F. ZUO, Y. DA XU, L. andZHANG, L. (2014). IoT-based intelligent perception and access of manufacturing resource toward cloud manufacturing. IEEE Transactions on Industrial Informatics, 10(2), pp. 1547-1557.

[4] HASAN, L.M., ZGAIR, L.A., NGOTOYE, A.A., HUSSAIN, H.N., NAJMULDEEN, C. (2015). A Review of the Factors that Influence the Adoption of Cloud Computing by Small and Medium Enterprises.*Scholars Journal of Economics, Business and Management*, 2(8a), pp. 842-848.

[5] THOTA, C., SUNDARASEKAR, R., MANOGARAN, G., VARATHARAJAN, R., and PRIYAN, M.K. (2018). Centralized fog computing security platform for IoT and cloud in healthcare system. In *Exploring the convergence of big data and the internet of things*, *IGI Global*, pp. 141-154.

[6] Al-MASHHADI, H.M. and ALA'A, A.K. (2018). Hybrid Homomorphic Cryptosystem for Secure Transfer of Color Image on Public Cloud. *International Journal of Computer Science and Network Security*, 18(3), pp. 48-55.

[7] HAMOUD, A.K. and Obaid, T.A.S. (2013). Building Data Warehouse for Diseases Registry: First step for Clinical Data Warehouse.*International Journal of Scientific & Engineering Research*, 4(11), pp. 636-640.

[8] HAMOUD, A. ADDAY, H. OBAID, T., and HAMEED, R. (2016). Design and Implementing Cancer Data Warehouse to Support Clinical Decisions.*International Journal of Scientific & Engineering Research*, 7(2), pp. 1271-1285.

[9] HUMADI, A. and HAMOUD, A. (2017). Online Real Time Fuzzy Inference System Based Human Health Monitoring and Medical Decision Making.*International Journal of Computer Science and Information Security*, 15(4), pp. 197-204.

[10] HAMOUD, A.K. (2016). Applying Association Rules and Decision Tree Algorithms with Tumor Diagnosis Data. International Research *Journal of Engineering and Technology*, 3(8), pp. 27–31.

[11] DOUKAS, C., and MAGLOGIANNIS, I. (2012). Bringing IoT and cloud computing towards pervasive healthcare.In*2012 Sixth International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing (IMIS)*, pp. 922-926.

[12] LEE,I., and LEE, K. (2015). The Internet of Things (IoT): Applications, investments, and challenges for enterprises. *Business Horizons*, 58(4), pp. 431-440.

[13] YIN, Y., ZENG, Y., CHEN, X., and FAN, Y. (2016). The internet of things in healthcare: An overview. *Journal of Industrial Information Integration*, 1, pp. 3-13.

[14] Al-HASHIMY, M.N.H. and Al-HASHIMY, H.N.H. (2019). Strategic Accounting in the Profitability of Construction Engineering Projects Management Companies in Iraq. *Journal of Engineering and Applied Sciences*, 14, pp. 941-944.

[15] HUSSEIN, H.N. KASIM, N. and ARUMUGAM, V. (2015). A Review of Creative Accounting Practices and Its Area. *Technique and Ways of Prevention*, 4(10), pp. 1377-1381.

[16] AL-HASHIMY, H.N.H. (2018). The Effect of Tax System on Shareholder Decisions when Choosing a Accounting Principles. *Journal of Reviews on Global Economics*, 7, pp. 21-27.

[17] XU, B., XU, L., CAI, H., XIE, C., HU, J., & BU, F. (2014). Ubiquitous Data Accessing Method in IoT-Based Information System for Emergency Medical Services. *IEEE Transactions on Industrial Informatics*, 10(2), pp. 1578-1586.

[18] ARUMUGAM, V., HUSSEIN, H.N., and NAJMULDEEN, C. (2015). A Review and Model Development of the Factors that Affect Mobile Marketing Acceptance by Customers.*International Journal of Science and Research*,4(10), pp. 1475-1478.

[19] ABBOU, A.N. BADDI, Y., and HASBI, A. (2018). Software Defined Networks in Internet of Things Integration Security: Challenges and Solutions," in 2018 *6th International Conference on Wireless Networks and Mobile Communications (WINCOM)*, pp. 1-6.

[20] FLEISCH, E. (2010). What is the internet of things? An economic perspective. *Economics, Management, and Financial Markets*, 5(2), pp. 125-157.

[21] HASAN, L.M., ZGAIR, L.A., NGOTOYE, A.A., HUSSAIN, H.N., and NAJMULDEEN, C. (2015). A review of the factors that influence the adoption of cloud computing by small and medium enterprises. *Scholars Journal of Economics, Business and Management*, 2, pp. 842-848.

[22] GOPE,P. and HWANG, T. (2016). BSN-Care: A secure IoT-based modern healthcare system using body sensor network. *IEEE Sensors Journal*, 16(5), pp. 1368-1376.

[23] Al-Hashimy, H.N.H. (2017). Factor Influencing Salaries and Wage Order: *Empirical Study at Basra University*, 19(1), pp. 30-36.

[24] ALLETTO, S., CUCCHIARA, R., DEL FIORE, G., MAINETTI, L., MIGHALI, V., et al.(2016). An Indoor Location-Aware System for an IoT-Based Smart Museum. *IEEE Internet of Things Journal*, 3(2), pp. 244-253.
[25] SICARI, S., RIZZARDI, A., GRIECO, L.A., and COEN-PORISINI, A. (2015). Security, privacy and trust in Internet of Things: The road ahead. *Computer Networks*, 76, pp. 146-164.
[26] JING, Q., VASILAKOS, A.V., WAN, J. LU, J., and QIU, D. (2014). Security of the Internet of Things: perspectives and challenges. *Wireless Networks*, 20(8), pp. 2481-2501.
[27] Gulati, R. (1999). Network location and learning: The influence of network resources and firm capabilities on alliance formation. *Strategic Management Journal*, 20(5), pp. 397-420,
[28] CHEN, S. XU, H. LIU, D. HU, B. and WANG, H. (2014). A vision of IoT: Applications, challenges, and opportunities with china perspective," *IEEE Internet of Things Journal*, 1(4), pp. 349-359.
[29] SCHÖN, D.A. (2017).*The Reflective Practitioner: How professionals think in action*. Routledge.
[30] SCHOEN, C.,OSBORN, R.E., SQUIRES, D.A., DOTY, M.M., RASMUSSEN, P.W., PIERSON, R., APPLEBAUM, S.(2012). A survey of primary care doctors in ten countries shows progress in use of health information technology, less in other areas. *Health Affairs*, 31(12), pp. 2805-2816.
[31] KRISHNA, V.V., SHASTRI, S., KULSHRESTHA, S. and MARIAJOSSY, M.A. (2018).Design of Drone Ambulance. *International Journal of Pure and Applied Mathematics*, 119(15), pp. 1813-1818.
[32] GUO, B. ZHANG, D. WANG, Z. YU, Z. and ZHOU, X. (2013). Opportunistic IoT: Exploring the harmonious interaction between human and the internet of things. *Journal of Network and Computer Applications*, 36(6), pp. 1531–1539, 2013.
[33] MYSLINSKI, L.J. (2017). Drone device security system. Google Patents.
[34] GOZALVEZ, J. (2016).New 3GPP standard for IoT [mobile radio].*IEEE Vehicular Technology Magazine*, 11(1), pp. 14-20.
[35] ECCLES, M., GRIMSHAW, J. WALKER, A. JOHNSTON, M. and PITTS, N. (2005).Changing the behavior of healthcare professionals: the use of theory in promoting the uptake of research findings. *Journal of Clinical Epidemiology*, 58(2), pp. 107-112.
[36] PEREZ, C. &SOETE, L. (1988). Catching up in technology: entry barriers and windows of opportunity.In DOSI, G. et al. (Eds.) *Technical Change and Economic Theory, London: Francis Pinter*, pp. 458-479.
[37] SIRON, R., TASRIPAN, M.A., MAJID, M.Y. (2013). A study of quality of working life amongst managers in Malaysian industrial companies. *Journal of Business and Economics*, 4(7), 561-570.
[38] SEKARAN, U. and BOUGIE, R. (2003). *Research methodology for Business*. New York: John Wiley & Sons, Inc.
[39] PALLANT, J. (2013).*SPSS survival manual*. McGraw-Hill Education (UK).

## 参考文:

[1] ALAMERI, I.A. (2018).MANETS 与物联网系统：数据路由算法的发展。工程，技术与应用科学研究， 8(1), 第 2604-2608 页.
[2] ILIC, A. 和 FLEISCH, E. (2016). 增强现实与物联网. (Auto-ID Labs White Paper, No. BIZAPP-068). 瑞士苏黎世: Auto-ID Labs ETH / HSG.
[3] TAO, F. ZUO, Y. DA XU, L., ZHANG, L. (2014). 基于物联网的智能感知和制造资源对云制造的访问。IEEE 工业信息学交易, 10(2), 第 1547-1557 页.
[4] HASAN, L.M., ZGAIR, L.A., NGOTOYE, A.A., HUSSAIN, H.N., NAJMULDEEN, C. (2015). 影响中小企业采用云计算的因素综述。学者经济学，商业和管理杂志, 2(8a), 第 842-848 页.
[5] THOTA, C., SUNDARASEKAR, R., MANOGARAN, G., VARATHARAJAN,

R., PRIYAN, M.K. (2018). 物联网和云在医疗保健系统中的集中雾计算安全平台。在探索大数据和物联网的融合, *IGI Global*, 第 141-154 页.

[6] AL-MASHHADI, H.M. 和 ALA'A, A.K. (2018). 用于公共云彩色图像安全传输的混合同态密码系统。国际计算机科学与网络安全期刊, 18(3), 第 48-55 页.

[7] HAMOUD, A.K. 和 OBAID, T.A.S. (2013). 构建疾病登记数据仓库：临床数据仓库的第一步。国际科学与工程研究期刊, 4(11), 第 636-640 页.

[8] HAMOUD, A. ADDAY, H. OBAID, T., HAMEED, R. (2016).设计和实施癌症数据仓库以支持临床决策. 国际科学与工程研究杂志, 7(2), 第 1271-1285 页.

[9] HUMADI, A. 和 HAMOUD, A. (2017). 基于在线实时模糊推理系统的人体健康监测与医疗决策。国际计算机科学与信息安全杂志, 15(4),第 197-204 页.

[10] HAMOUD, A.K. (2016). 应用关联规则和决策树算法与肿瘤诊断数据。国际工程与技术研究期刊, 3(8), 第 27–31 页.

[11] DOUKAS, C., 和 MAGLOGIANNIS, I. (2012). 将物联网和云计算带入普及的医疗保健领域。 2012 年第六届普适计算创新移动和互联网服务国际会议*(IMIS)*, 第 922-926 页.

[12] LEE, I., 和 LEE, K. (2015). 企业的应用, 投资和挑战. 商业视野, 58(4), 第 431-440 页.

[13] YIN, Y., ZENG, Y., CHEN, X., FAN, Y. (2016). 医疗保健中的物联网：概述. 工业信息集成杂志, 1, 第 3-13 页.

[14] Al-HASHIMY, M.N.H. 和 Al-HASHIMY, H.N.H. (2019). 伊拉克建筑工程项目管理公司盈利能力的战略会计. 我们的工程和应用科学, 14, 第 941-944 页.

[15] HUSSEIN, H.N. KASIM, N., ARUMUGAM, V. (2015).创新会计实务及其领域综述。技术和预防方法, 4(10), 第 1377-1381 页.

[16] AL-HASHIMY, H.N.H. (2018). 选择会计原则时税制对股东决策的影响。全球经济评论期刊, 7, 第 21-27 页.

[17] XU, B., XU, L., CAI, H., XIE, C., HU, J., BU, F. (2014). 基于物联网的紧急医疗服务信息系统中无处不在的数据访问方法 IEEE 工业信息学交易 10(2), 第 1578-1586 页.

[18] ARUMUGAM, V., HUSSEIN, H.N., NAJMULDEEN, C. (2015). 影响客户移动营销接受因素的回顾与模型开发. 国际科学与研究杂志, 4(10), 第 2013-2016 页.

[19] ABBOU, A.N. BADDI, Y., HASBI, A. (2018). 物联网集成安全中的软件定义网络：挑战与解决方案, "2018 年第 6 届无线网络与移动通信国际会议(WINCOM), 第 1-6 页.

[20] FLEISCH, E. (2010). 什么是物联网？经济观点。经济学, 管理学和金融市场, 5(2), 第 125-157 页.

[21] Hasan, L.M., Zgair, L.A., Ngotoye, A.A. Hussain, H.N., Najmuldeen, C. (2015). 回顾影响中小企业采用云计算的因素, " 学者经济学, 商业与管理学报, 2, 第 842-848 页.

[22] GOPE, P. 和 HWANG, T. (2016). BSN-Care：使用身体传感器网络的安全的基于物联网的现代医疗保健系统 IEEE 传感器杂志, 16(5), 第 1368-1376 页.

[23] Al-HASHIMY, H.N.H. (2017). 影响工资和工资秩序的因素：巴士拉大学的实证研究, 19(1), 第 30-36 页.

[24] ALLETTO, S., CUCCHIARA, R., DEL FIORE, G., MAINETTI, L., MIGHALI, V., et al. (2016). 基于物联网的智能博物馆的室内位置感知系统。 IEEE 物联网期刊, 3(2), 第 244-253 页.

[25] SICARI, S., RIZZARDI, A., GRIECO, L.A., COEN-PORISINI, A. (2015). 物联网的安全，隐私和信任：前进的道路. 计算机网络， 76, 第 146-164 页.

[26] JING, Q., VASILAKOS, A.V., WAN, J. LU, J., QIU, D. (2014). 物联网的安全：观点和挑战。无线网络, 20(8), 第 2481-2501 页.

[27] GULATI, R. (1999). 网络定位与学习：网络资源和企业能力对联盟形成的影响。战略管理期刊, 20(5), 第 397-420 页.

[28] CHEN, S. XU, H. LIU, D. HU, B. WANG, H. (2014). 物联网的愿景：中国视角的应用，挑战和机遇，“IEEE 物联网杂志，, 1(4), 第 349-359 页.

[29] SCHÖN, D.A. (2017). 反思性从业者：专业人士如何思考行动。劳特利奇。

[30] SCHOEN, C., OSBORN,R.E., SQUIRES,D.A., DOTY,M.M., RASMUSSEN,P.W., PIERSON,R., APPLEBAUM, S.(2012). 对 10 个国家的初级保健医生进行的一项调查显示，卫生信息技术的使用取得了进展，其他领域则较少。卫生事务， 31(12), 第 2805-2816 页.

[31] KRISHNA, V.V., SHASTRI, S., KULSHRESTHA, S., MARIAJOSSY, M.A. (2018).无人机救护车的设计。国际纯粹与应用数学杂志， 119(15), 第 1813-1818 页.

[32] Guo, B. Zhang, D. Wang, Z. Yu, Z. Zhou, X. (2013). 机会性物联网：探索人与物联网的和谐互动网络与计算机应用, 36(6), 第 15311539 页.

[33] MYSLINSKI, L.J. (2017). 无人机设备安全系统。“Google 专利。

[34] GOZALVEZ, J. (2016). 物联网[移动无线电]的新 3GPP 标准。IEEE 车载技术杂志, 11(1), 第 14-20 页.

[35] ECCLES, M., GRIMSHAW, J. WALKER, A. JOHNSTON, M. PITTS, N. (2005).改变医疗保健专业人员的行为：利用理论促进研究结果的采纳。临床流行病学杂志, 58(2), 第 107-112 页.

[36] PEREZ, C. 和 SOETE, L. (1988). 追赶技术：进入障碍和机会之窗。在 Dosi, G。等人。（编辑）技术变革与经济理论，伦敦：弗朗西斯品特, 第 458-479 页.

[37] SIRON, R., TASRIPAN, M.A., MAJID, M.Y. (2012). 对马来西亚工业公司经理人工作生活质量的研究。第二届国际管理会议（第二届 ICM 2012）会议录。

[38] SEKARAN, U. 和 BOUGIE, R. (2003). Research methodology for business. New York: John Wiley & Sons, Inc.

[39] PALLANT, J. (2013).SPSS 生存手册。麦格劳希尔教育（英国）.