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THE IMPACT OF COSTS ASSOCIATED WITH INFORMATION SYSTEMS AT THE LEAN PRODUCTION PRACTICES IN SAUDI INDUSTRIAL COMPANIES

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Synopsis:

This study is aimed at identifying the impact of costs associated with information systems at the Lean production practices , namely: Saudi industrial companies. The study was implemented during the academic year 2016/2017.

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This study aimed at identifying the impact of costs associated with information systems at the Lean production practices, namely: Saudi industrial companies. The study was implemented during the academic year 2016/2017. The researcher chose a random sample that consisted of 50 workers at the Saudi industrial companies. The results showed that there are effects of MIS on Lean production and the researcher recommended to develop and enact laws and regulations that contribute in the effective use of management information systems at the Saudi industrial companies.

Introduction:

The information technology (IT) solves many problems through logical thinking as they develop understanding and awareness about many social and economic aspects. In addition, (IT) contributes in the development humanity and culture, helps in resource management and affects social, moral, economic and political relations as well as affecting job performance. In return, this contributes in the effective communication and solves problems whenever they occur. Moreover, IT can develop the employees' skills and in doing accurate tasks that enhance the spirit of creativity and innovation.

On the other hand, IT represents the main priority for the IT sector to facilitate services, improves productivity and integrates all operators of systems and institutions in providing hardware and technical applications. Furthermore, internet has contributed significantly in providing the necessary infrastructure to provide databases. (Joshi, 2013)

Management of information systems mainly is linked to information technology, which can be defined as the structural configuration of integrated and interactive of machinery, equipment, software and manpower. This ensures data collection and processing in order to provide the necessary information (to the beneficiaries, in terms of storage, updating and retrieval of information) on the right time, with less cost and high quality for the internal environment of the organization and for the surrounding environments. Conversely, this will facilitate the task of administrators at all levels in the decision-making to complete all administrative functions and to use of such information appropriately (Al-Mamary, 2014).

There are various requirements for the application of management information systems which focus on four basic aspects, namely: (material requirements, human, technical and administrative), that are described as follows (Laudon & Jane, 2009):

Physical Requirements: They represent the physical requirements of devices and networks and information system, including output and input units and the central processing units. Other physical requirements help an organization to do transactions, accounting tasks, the planning and control of production processes. In addition to that, it facilitates the preparation of regular and special reports, helps managers in taking decisions and provide the establishment with indicators about the current and future performance, challenges and the changes that are required to improve the company's performance. (Bidgoli, 2004).

In this vein, information technology plays a significant role in the analysis of problems and the decisions taken in the industrial and service organizations. The results of research show that the benefits are based on the use of computer information system which help in reducing the number of management levels, increase control in the central decision-making process, enhance the capabilities and strengthens the regulatory decision-making processes by facilitating communications between those who participate in the decision making process.

Technical Requirements: the use of information technology and software lead to observe problems. On the other hand. The use of information technology saves time and plays a positive role in the effectiveness of the decisions taken. When information systems are linked to business networks, the level of using of such technology improves. Such systems require advanced use of computer applications, meanwhile the infrastructure upgrades trading within organizations through the integrated systems, not to forget the availability of information systems which provide many solutions and alternatives for the problems. In fact, the decision-making process has been developed for the benefit industrial sectors.

Requirements of Human: MIS plays an important role in the evaluation of staff performance average, good training of staff in developing information systems, putting the necessary strategies such as the identification of projects and areas of appropriate information systems, know-how to organize the information systems. However, the strategic decision-making occurs according to the theory of the (Trash) that require finding mechanisms to prevent individuals from taking false or wrong taking decisions related to information systems that are linked to the organization/corporation.

Administrative Requirements: which means the rate of using management information systems at work by administrators? Many studies showed a relationship between the management information system and the distribution of power between various organizational units, as well as the planning and distribution of power and various activities. Such requirements reduce centralization and helps speeds the decision-making process. (Laudon, 2009)

Although this application of management information systems in the industrial field may help a lot of industrial organizations by applying many of the principles and industrial bases such as reducing the cost as well as the flexibility, quality and reduce waste, which leads ultimately to gaining competitive advantages compared with the organizations working with them in the same sector. (Peinado, 2009)

The foundations of management information systems mentioned above are the principles of production or manufacturing (Lean Production), so the management information systems and production slim, intersect and share these principles

Agile production is based on the principles and methods of scientific and methodological basis of reducing waste at all stages of production, as well as reducing waste to lower levels, as well as they are mainly dependent on maximizing value for customers.

As well as the main focus is to achieve the greatest possible output using less inputs, and focus mainly on the outstanding quality and low cost, delivery time and the right time, as well as the main focus is on time management and benefit from it at all stages of production. (Pettersen, 2009),

This has its roots slim production philosophy to Toyota (TPS Company) (Toyota Production System), as famous in twentieth century, it made a lot of achievements, was transformed from a local company to privilege a global company, so it is even more urgent when the bulk of companies to move away from systems traditional management and rely on modern management principles, and production is one of the most prominent slim.

The industrial sector plays a good role in improving the Saudi economy, and is considered the most prominent when compared with other sectors, and it is the main sector in the reduction of many of the economic, social and political problems, and that it affects the majority of the members of Saudi society, could thrive this sector affects positive impact on the members of society, and to reverse the negative cast a shadow on them, so it has become necessary to a lot of legislation and regulations mode, as well as to encourage the transition from traditional to modern methods of administration because of its importance to prosperity

Through this study, the researcher has identifies a title, namely: " The impact of costs associated with information systems at the Lean production practices in Saudi industrial companies" which the researcher hopes to discuss and shed light on this issue appropriately through this study.

Problem of the study:

The challenges and pressures facing businesses are growing and increasing rapidly one day after the other. The reason for that is the technology revolution that evaded the whole world during the last part of the 20th century. Consequently, those companies have to bring and use all kinds of new technology in order to cope with their competitors and new markets as well. On the other hand, there is an urgent need to deal with the many challenges and changes that take place in our world very quickly. Corporation need to face such challenges firmly on solid foundations of scientific thought. Moreover, they should make use of the unfair application of management information in improving the performance (the machines, staff, equipment, IT … etc) at all appropriate levels.

As that many organizations are still adopting traditional management principles, forgetting the application of the principles of modern management and the most important of which the foundations and principles of agile production, as it has become even more urgent application by a lot of organizations, companies and industrial Arabia, as they have a better and more abundant in improving the competitive advantage she has.

Also that this study is of direct benefit to many organizations and Saudi industrial companies, as it can be manifested interest by adopting the principles and foundations and customs of slim production which makes these companies emulate their counterparts and are going to guiding a lot of developed countries (such as USA, Germany. ..etc).

In doing so, the researcher has to choose this subject in order to be a springboard to the problem of the study, so the objective of this study is structured to ensure the availability of the application of Lean production in industrial projects requirements

Accordingly, the problem of the study is represented in the following questions which the researcher will try to answer in this research:

The first question: Are there significant statistical differences for the application of costs associated with information systems by the Saudi industrial companies due to gender (male, female)?

Second question: Are there any significant statistical differences for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of its workers due scientific expertise (less than five years, from (5-10) years, more than ten years)?

Third question: Are there any significant statistical differences for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to due to age.

Forth question: Is there an impact on the costs associated with information systems at the Lean production practices in Saudi industrial companies?

Hypotheses:

The study relies on the following (zero) hypothesis:

First hypothesis :

H01: There are no significant statistical differences at the level ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to gender.

Second: hypothesis

H02: There are no significant statistical differences at the level ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to experience.

Third: hypothesis:

H03: There are no significant statistical differences at the level ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to due to age.

Fourth: hypothesis:

H04: There are no impacts at ($\alpha \leq 0.05$) on the costs associated with information systems at the Lean production practices in Saudi industrial companies.

Objectives of the study:

The main purpose of this study is to identify the " The impact of costs associated with information systems at the Lean production practices in Saudi industrial companies ", in addition to the following sub-objectives:

- Show whether there are differences for the application of management information systems to the Saudi industrial companies from the perspectives of their workers due to gender (male, female)?
- Show the differences for the application of management information systems to the Saudi industrial companies from the perspectives of their workers due scientific expertise (less than five years, from (5-10) years and more than ten years of experience)?
- Show the differences for applying of management information systems to the Saudi industrial companies from the perspectives of its workers due to age.

Significance of the study:

A-The theoretical importance: The importance of the study stems from the fact it highlights the topic " The impact of costs associated with information systems at the Lean production practices in Saudi industrial companies", Accordingly, this study will contain a population, a sample, method of data collection, statistical analysis and finally will present the results and recommendations that contribute to enriching the subject. In addition, the researcher will try to identify all obstacles that prevent the implementation of management information systems in the Saudi industrial companies.

B-Application of the results:

This study is expected to be useful in terms of the following aspects:

- The employees who work for the Saudi industrial companies: they can benefit from this study in identifying the impact of the application of management information systems on Lean production.

- Managers: they can develop policies and strategies that improve the use of management information systems effectively.

- Researchers can to identify the findings; conclusions and results which help them develop and make improvements in other variables relevant to the topic of the study.

Limitations of the study:

Temporary: This study is conducted during the academic year 2016/ 2017 and did not examine previous.

Space: The study was implemented in the Saudi industrial companies only and did not include similar companies in other Arab countries or regions in the world.

Human: in order to achieve the purposes and objectives of the study, a questionnaire will be prepared and distributed to a random sample of employees who work for Saudi industrial companies.

Operational definitions:

Management information systems: which is defined as "computerized platforms through computers, used in the management of an organization or company? Those systems can make data analysis and helping in taking rational decisions to achieve the maximum benefit from using computers and the systems that assist in the provision of information.

Lean production: is defined as an economical and efficient production, and avoid the use of many resources, and limited to what is essential and necessary in order to obtain the final product..

Review of related literature

Previous studies:

The researcher will present the studies that are relevant to the subject of study, arranged in descending order:

- Al-Mamary..*et..al,* 2014) conducted a study that examined the factors affecting successful adoption of management information systems in organizations towards enhancing organizational performance ".This paper investigated management information systems and aimed to provide reliable, complete and accurate information to managers in order to enhance the organizational performance in their companies.

- Jane, et. al, 2013) conducted a study that examined management information system as a technique in the administrations of secondary schools. The study was implemented in ABA Zone South East Nigeria". This paper investigated information management system as a tool in secondary schools in the ABA Education Management District, southeast Nigeria. This descriptive study attempted to determine the extent of the using information systems management in the secondary schools as a tool to improve management and administrative tasks. The sample consisted of 44 principals and 210 teachers representing 44 and 10 percent of school principals and teachers of the 100 principles and 2,100 teachers who were selected through a stratified random sample representation. The results of the study indicated that the performance of the school management has improved and their knowledge about the tasks have become better, which in return improved the performance of the secondary school principals. The study concluded that the proper implementation and application of management information system will be useful to the administrator, the teacher, the student and the community as a whole. The researcher recommended that the government, the Ministry of Education and the Board of Secondary

Education schools should be equipped with the necessary tools and devices that help in the retrieval, dissemination and storage of information.

- Navaz, 2013, conducted a study that aimed to examine the concepts and applications of management information systems. In addition, the study intended to investigate the integrated system so as to provide information that support planning, organization, control of functions in the special reports issued by the middle management. Those systems include all information and communication channels. Information systems consist of all items needed in the collection and dissemination of data and information. This usually involves making changes in the hardware, channels, software, people, data, information and communication styles and methods. The results of the study did not show significant statistical differences that are attributed to gender, age and system operation including data collection, processing, storage and retrieval of information and data sets (e.g. administrative reports**).**

- Nayak..et..al, 2012 implemented a study that aimed at examining the efficiency of management information systems for the decision making process. In addition, the study investigated the decision-making process which is considered as an integral part of the work of any corporation. To facilitate the decision-making process in this world of competition than ever, it is imperative that managers should have the right information at the right time to bridge the gap between the needs and expectations. Another objective of the study was to know whether information systems facilitate a better flow of information management and create a good understanding of management information systems that are used in the organization at all levels. In return, this provide managers at all levels who use IS with a good ability to take decisions, planning and implementation and control of the programs. Information management system has many roles to perform, such as supporting the decisions taken, monitoring the performance and careers. To gain a more

detailed understanding of a particular function of the company, there is a need to know and examine the uses and benefits of management information systems with regard to the physical components of the company. The results showed that MIS and facilitated all of such tasks and functions, helps in the decision making process, synchronize the flow of information in the organization as the management felt it plays and important role in increasing the performance of both the staff and the departments of the company.

- Karim's study (2011) intended to examine the significance of management information systems for enhancing strategic and tactical planning. Moreover, this study aimed at investigating the key factors that facilitate the achievement and efficiency of decision-making in the organization. The study also intended to explore the extent of implementing successful decisions in two selected financial organizations in the Kingdom of Bahrain. The paper examined whether the selected financial institutions in Bahrain vary in terms of using the management information systems by the senior leadership, so as to take strategic and tactical planning decisions. Since conditioning and quantitative research are designed to examine two hypotheses, a questionnaire consisting of 190 items was distributed equally to those who work in the various administrative levels in the selected organizations. The results showed that the MIS was used primarily to enhance the strategic planning in the financial institutions. Regression analysis revealed that the tactical planning had no effect on the decision-making process, while the strategic planning have a clear impact on the effectiveness of the decision-making in both organizations. The study showed no significant statistical differences in terms of gender and experience variable.

- Reddy..et..al, 2009 implemented a study that aimed at examining the role of management information systems in helping managers take various decisions in the whole organization. This study also intended to investigate the role of management information

systems (MIS) in implementing administrative activities. The main purpose of this research is to know whether MIS provides accurate and timely information that are necessary to facilitate decision-making and enable organizations to plan and control the executive and the tasks effectively. The results of the study showed that information systems are an appropriate tool and mechanism to ensure that managers can access information easily and quickly, with the form and within the time they are needed.

Study (Peinado, 2009) represent the main objective of this study by identifying the extent of interest in production graceful with industrial organizations in the three countries (Argentina, Brazil, Romania), this was to rely on the descriptive method and also been using the analytical method, and represents the study population and industrial organizations operating in the states three (Argentina, Brazil, and Romania), this is the study by choosing a random sample consisted of (248) Organization of the aforementioned countries, and highlighted the results from this study to build the foundations of slim production leads to a large impact and large benefits in terms of organizational gains, this study recommended maximizing associated with the subject of study studies, and applied to other communities, similar to this study with the current study is that it deals with the subject of the graceful production, but they differ from the current study in the sample, it is the study sample organizations in Brazil, Argentina and Romania, and the sample of the current study are Saudi Industrial companies.

Study (Pettersen, 2009) The study aimed to shed light on the graceful production and principles, this was based on this study, the descriptive approach, this study found a number of conclusions, highlighted that there is no consensus regarding the slim production definition of what many of the administration book, so the writers have different views of the characteristics of this concept, which leads to the difficulty of applying this concept to many organizations, the study recommended to encourage the

adoption of agile production among business organizations, similar to this study with the current study is that it deals with the subject of the graceful production, but they differ from the current study addressed the lack of management information systems.

Study (Mohd..et..al, 2009) The study aimed to shed light on the application of the principles of slim production among Japanese organizations, and the study was based on a descriptive approach, as well as analytical, and this study represents the Japanese society organizations, however, and the difficulty of access to the entire study population was taken random sample Peacekeeping Financing of working for the Japanese Toyota, especially factory (Carmanu), and the study concluded that many of the results, highlighted that Japanese companies mainly based on the slim production, particularly company, as well as the adoption of principles and foundations of slim production in these organizations a competitive advantage compared with operating in the same sector organizations, the study recommended the adoption of principles and foundations of slim production for many Japanese business organizations, similar to this study with the current study is that it deals with the subject of the graceful production, but they differ from the current study not dealt with MIS.

The researcher's comments on the previous studies): What distinguishes this study from other studies?

This study is distinct from previous studies in the following aspects:

- It attempts to unveil workers trends and perspective in the Saudi industrial companies with respect to the subject of the study.
- This study is a descriptive and analytical one since the researcher will develop a tool (a questionnaire) to measure a representing sample. The questionnaire will be distributed to

the employees of the Saudi industrial companies and it will uncover their perspective about the impact of IMS in such companies.

- It is the only study that examines the impact of IMS in the Saudi industrial companies and attempts to know the perspectives of the workers in this regard. On the other hand, the study will shed light and discuss IMS it from all sides and perspectives since they are use by Saudi industrial companies.

The study procedures

Study Approach:

It was used descriptive and analytical approach that deals with data collection, analysis and interpretation in addition to the statistical treatment of the variables and their linkages, as well as analysis and interpretation of results by their relevance.

The study population and sample:

The study population consisted of a group of workers at the Saudi industrial companies The study sample consisted of (50) of the workers at the Saudi industrial companies, during the year 2016 /2017; the sample was chosen randomly.

1) Gender :

Table (1)

Demographic Characteristics of Study Sample (Gender)

Gender	Frequency	Percentage
Male	40	80.0 %
Female	10	10.0 %
Total	**50**	**100.0 %**

Table (1) shows that 80.0% of respondents are males and the rest are females .

2-Experience :

Table (2)

Demographic Characteristics of Study Sample (experience)

Experience	Frequency	Percentage
less than 5 years	23	46.0
from 5 to 10 years	12	24.0
from 11 to 15 years	5	10.0
16-20 years	5	10.0
More than 20 years	5	10.0
Total	**50**	**100.0 %**

The most percent of experience (46.0%) was for respondents whom experience (less than 5 years), as shown in table (2) and around (24.0%) of respondents have experience (from 5 to 10 years), and 10.0% are (from 11 to 15 years) , and (16-20 years) are 10.0%, and the rest are (More than 20 years).

3-Age :

Table (3)

Demographic Characteristics of Study Sample (Age)

Age	Frequency	Percentage
less than 25 year	7	14.0 %
from 25 to 34 year	6	12.0 %
from 35 to 44 year	7	14.0 %
more than 45 year	30	60.0 %
Total	**50**	**100.0 %**

It was found that (14.0%) of the sample are (less than 25 year old), (12.0%) of them are between (25 to 34 years), (14.0%) of them are (from 35 to 44 year), (60.0%) of them are (more than45 year).

The study tool:

In order to obtain information and data; researcher depends on the construction and development of Scale (a questionnaire), a standard tool has been relying on to build reviews and studies and a former literature, and takes into account the build to make effectors conscious of its goal and components, accuracy and clarity and uniformity in the

manner that serves the goals and objectives of the study. The way that serves the goals of the study questions.

Reliability and validity of the study:

The researcher presented a questionnaire study on a group of university professors, and that they have to amend some paragraphs of the resolution, and the number of paragraphs of the resolution to (19) paragraph. In order to achieve the purposes and objectives of the study questionnaire was designed based on the model Likert (Scale Likert) Quintet, and consisted of two parts, which included the first part on the personal information data, and the second part consisted of paragraphs on the subject of the study, has been grading standard answer for each paragraph in accordance with the Likert scale Quintet and identified five levels: Strongly agree (5 degrees), Agree (4) Neutral (3 degrees) Disagree (degrees) and Strongly Disagree (one degree)

In order to verify the stability of the questionnaire was conducted test (Cronbach's alpha) to measure the stability of the measuring instrument reaching internal consistency of the proportion of the questionnaire ($\alpha = 84.4\%$) which is an acceptable percentage for the purposes of the study.

Through previous procedures to ensure the veracity of the study tool and determine the sample study, questionnaires were distributed to the sample in question, and then unloaded the study sample on a computer answers, and analyze data using statistical analysis system (Twentieth Edition) (Statistical Package for Social Sciences -SPSS. Ver20).

The study variables

The study variables in costs associated with information systems (independent variable), and Lean production (dependent variable), demographic variables of (gender, experience).

Discuss the results:

The mean of the scale (3) has been used as a standard for judgment. If the result is lower than (3), this indicates that the phrase was not good. However, if the result is higher than (3) indicating to a good result:

The findings and statistical analysis for this part are illustrated in the following table:

The First Section : material requirements

Table (4) shows the mean, standard deviation and the degree of approval for each paragraph on this Field.

Table (4)

Means and Standard Deviation of the First Section (material requirements)

Questions	Mean	Std. Deviation	N
First Section : material requirements			
1. The Saudi industrial companies develop computer hardware to keep pace and satisfy the growing demands and needs of their customers.	3.58	1.16	50
2- The accessories and hardware of computers should fit with the nature of the work.	3.33	1.26	50
3- Computers used in modern Saudi industrial companies are of high speed and quality.	3.21	0.08	50
Total	**3.37**	**0.83**	

Table number (4) shows that the mean average for the answers about the "First Section: **material requirements** " (3.37), was "Agree" and the standard deviation was (0.83).

As Shown in Table (4), there were positive attitudes toward the above questions because their mean were greater than the mean of the scale (3), but in different percentage.

The phrase which gained the highest mean in this Section is number (2) " The accessories and hardware of computers should fit with the nature of the work ". This means reached (3.58) and the standard deviation was (1.16).

This means was the lowest and amounted to (3.21) regarding the phrase number (3) "Computers used in modern Saudi industrial companies are of high speed and quality".

The second Section: The Technical Requirements

Table (5) shows the mean, standard deviation and the degree of approval for each paragraph of this Section.

Table (5)

Means and Standard Deviation of Second Section (The Technical Requirements)

Questions	Mean	Std. Deviation	N
Second Section : The Technical Requirements			
4- Saudi industrial companies have a master database.	3.63	1.21	50
5-latest versions of the software are available and ready-made.	3.42	1.11	50
6- Development programs are made automatically and continuously in collaboration with programming Saudi industrial companies.	3.33	1.18	50
7- The latest versions of operating systems are available.	3.72	1.23	50
8-Software needed for work help improve and implementation of administrative tasks and they are available.	3.26	1.11	50
9-Software security and protection are available on modern computers.	3.04	1.25	50
10- Saudi industrial companies maintains a backup databases to preserve all information.	3.29	0.24	50
Total	**3.38**	**1.04**	50

The previous table shows that the Mean average for the answers of the respondents was about the "second section: **The Technical Requirements** " (3.38), "Agree" And the average standard deviation was (1.04).

As Shown in Table (5), there were positive attitudes toward the above questions because their mean was greater than the mean of the scale (3), but with a different percentage.

The phrase which is the high mean in this Section is number (7) " The latest versions of operating systems are available ". This means amounted to (3.72) and the average standard deviation was (1.23).

This means gained the lowest level and reached (3.29) in terms of phrase number (10) " Saudi industrial companies maintains a backup databases to preserve all information ".

Third Section: human requirements

Table (6) shows the mean, standard deviation and the degree of approval for each paragraph of this section.

Table (6)

Means and Standard Deviation of the third section: human requirements

Questions	Mean	Std. Deviation	N
Third Section : human requirements			
11-There is a special section in the Saudi industrial companies for the maintenance of management information systems.	3.23	1.22	50
12-There are specialists who provide solutions to the problems of frequent users.	3.11	1.61	50
Total	**3.17**	**1.41**	**50**

From the above table you can see that the Mean average for the answers of the respondents was about the " Third Section : **human requirements** " (3.17), "Agree" And the average standard deviation was (1.41).

As Shown in Table (6), there were positive attitudes towards the above questions because their mean was greater than the mean of the scale (3), but in different percentage.

Phrase number (11) had the highest mean in this Section is number " There is a special section in the Saudi industrial companies for the maintenance of management information systems ". The average of this means amounted to (3.23) while the standard deviation was (1.22).

The means that had the lowest degrees amounted to (3.11), which relate to the phrase number (12) " There are specialists who provide solutions to the problems of frequent users ".

Fourth Section: the administrative requirements

Table (7) shows the mean, standard deviation and the degree of approval for each paragraph of this section.

Table (7)

Means and Standard Deviation of Fourth Section: the administrative requirements

Questions	Mean	Std. Deviation	N
Fourth Section : the administrative requirements			
13- Availability of management information systems provides all information needed by the workers in the various sections of Saudi industrial companies.	3.53	1.19	50
14- Availability of management information systems all the information to employees in a timely manner.	3.42	1.22	50
15- Information is updated constantly to suit with the needs of workers.	3.24	1.23	50
Total	**3.39**	**1.21**	50

The previous table shows that the Mean average for the answers of the respondents was about the "fourth section: **the administrative requirements** " (3.39), "Agree" And the average standard deviation was (1.21).

The phrase which is the high mean in this Field is number (13) which said (Availability of management information systems provides all information needed by the workers in the various sections of Saudi industrial companies), whereas the mean was (3.53) and the average standard deviation was (1.19).

This means was the lowest and reached (3.24) to the phrase number (15) which said (Information is updated constantly to suit with the needs of workers).

Fifth Section: Lean production

Table (8) shows the mean, standard deviation and the degree of approval on each paragraph.

Table (8)

Means and Standard Deviation of the Fifth Section: " Lean production **"**

Questions	Mean	Std. Deviation	N
Fifth Field: performance			
16- Lean production reduces the number of employees.	3.64	1.31	50
17- Lean production a lot of time required to do the tasks.	3.45	1.25	50
18- Lean production reduces the waste of resources	3.52	1.19	50
19- Lean production help to improve the services provided to the organization clients.	3.51	1.25	50
Total	**3.53**	**1.25**	50

The previous table shows that the Mean average for the answers of the respondents was regarding the " Fifth Section: " Lean production " (3.58), "Agree" and the average standard deviation was (1.25).

The phrase which is the high mean in this Field is number (16) which said (Lean production reduces the number of employees). Whereas its means was reached (3.64) and the average standard deviation was (1.131).

This indicates that the lowest results reached (3.45) to phrase number (17) " Lean production a lot of time required to do the tasks ".

Testing of the hypothesis

This study is based on two hypotheses namely: the null and the sub-set assumptions, which are:

First hypothesis :

H01: There are no significant statistical differences at the level ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to gender.

In order to validate the hypothesis (first sub-hypothesis) test was performed (Independent Samples T-Test), the table (9), show that.

Table (9)

Test of hypothesis (first hypothesis)

(Independent Samples T-Test)

Section	Mean (male)	Male Standard Deviations	Mean (Female)	Male Standard Deviations	Value (t)	SIG
First Section : material requirements	3.6259	.9725	3.7765	.9971	-1.127	.526
Second Section : The Technical Requirements	3.5345	1.0235	3.4118	1.0390	.877	.726
Third Section : human requirements	3.7466	1.0548	3.5706	1.0836	1.213	.749
Fourth Section : the administrative requirements	3.6149	1.0769	3.4788	1.1245	.913	.704

Table (9) shows that there are no significant statistical differences at ($\alpha \leq 0.05$) level between the application of costs associated with information systems to the Saudi industrial companies from the viewpoint of its workers depending on the demographic variables (gender).

Second: hypothesis

H02: There are no significant statistical differences at the level ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to experience.

In order to validate the second hypothesis a test was performed (One Way ANOVA) , the table (10), shows that result.

Table (10)

Test of hypothesis (Second sub-hypothesis) (One Way ANOVA)

Section	Items	Sum of Squares	Mean Square	F	df	Sig.
First Section : material requirements	Between Groups	13.284	4.428	4.807	47	.758
	Within Groups	197.133	.921		2	
	Total	210.417			49	
Second Section : The Technical Requirements	Between Groups	20.236	6.745	6.871	47	0.872
	Within Groups	210.070	.982		2	
	Total	230.305			49	
Third Section : human requirements	Between Groups	19.037	6.346	5.925	47	0.524
	Within Groups	229.184	1.071		2	
	Total	248.221			49	
Fourth Section : the administrative requirements	Between Groups	29.641	9.880	9.097	47	0.245
	Within Groups	232.426	1.086		2	
	Total	262.067			49	

* significant at the level ($\alpha \leq 0.05$)

Table (10) shows that there are significant statistical differences at the level of significance ($\alpha \leq 0.05$) for the application of of costs associated with information systems by the Saudi industrial companies from the viewpoint of its workers due to experience

Third: hypothesis:

H03: There are no significant statistical differences at the level ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to due to age.

In order to validate the hypothesis (**Third hypothesis**) test was performed (One Way ANOVA) , the table (11), shows that result.

Table (11)

Test of hypothesis (Third hypothesis) (One Way ANOVA)

Section	Items	Sum of Squares	Mean Square	F	df	Sig.
First Section : material requirements	Between Groups	22.065	7.355	8.356	47	.744
	Within Groups	188.352	.880		2	
	Total	210.417			49	
Second Section : The Technical Requirements	Between Groups	31.581	10.527	11.336	47	0.841
	Within Groups	198.724	.929		2	
	Total	230.305			49	
Third Section : human requirements	Between Groups	31.347	10.449	10.310	47	0.114
	Within Groups	216.874	1.013		2	
	Total	248.221			49	
Fourth Section : the administrative requirements	Between Groups	36.836	12.279	11.666	47	0.222
	Within Groups	225.231	1.052		2	
	Total	262.067			49	

* significant at the level ($\alpha \leq 0.05$)

From the above table, it is noted that there are significant statistical differences at ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies due to age.

Fourth: hypothesis:

H04: There are no impacts at ($\alpha \leq 0.05$) on the costs associated with information systems at the Lean production practices in Saudi industrial companies.

In order to validate the hypothesis (fourth hypothesis) test was performed (Standard Multiple Regression Analysis).

Table (12)

Test of hypothesis (fourth hypothesis)

(Standard Multiple Regression Analysis)

Beta	F Tabulated	R^2	R	Sig	Result of H0
0.824	628.781	0.677	0.824	0.002	Reject

Show data table (12) that the level of significance (0.000) which is less than (0.05), and thus have a decision rule says accept the alternative hypothesis, if the level of significance (SIG) greater than (0.05), and we reject the hypothesis nihilism if the significance level less from (0.05), and through the previous table shows that the level of significance (SIG) is equal to (0.002), and since this level of significance is less than the level of (0.05) decision rule that " There is impacts at ($\alpha \leq 0.05$) on the costs associated with information systems at the Lean production practices in Saudi industrial companies ".

Findings and recommendations

The findings of the study will be presented after the introduction, significance and objectives of the study, procedures, statistical analysis, presenting and discussing the most important aspects of the topic, namely:

First results of the study are summarized by answering the questions of the study:

The first question: Are there significant statistical differences for the application of costs associated with information systems by the Saudi industrial companies due to gender (male, female)? (this represents the answer to the first hypothesis)

Through statistical analysis, the researcher found that: " there are no significant statistical differences at ($\alpha \leq 0.05$) level between the application of costs associated with information systems to the Saudi industrial companies from the viewpoint of its workers depending on the demographic variables (gender)", This result is similar to (Navaz's, 2013) and (Karim,2011), which showed no significant statistical differences that can be attributed to gender.

Second question: Are there any significant statistical differences for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of its workers due scientific expertise (less than five years, from (5-10) years, more than ten years)?(the answer to the second hypothesis).

Through statistical analysis, it was found that: "there are significant statistical differences at the level of significance ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of its workers due to experience". This result is similar to (Karim's, 2011), which showed no differences that are attributed to the variables of gender, age and experience.

Third question: Are there any significant statistical differences at the level ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to due to age. (The answer to the third hypothesis).

Through statistical analysis, it was found that: "There are no significant statistical differences at the level ($\alpha \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to due to age. (This result is similar to Navaz's, 2013) which showed no differences that can be attributed to the variable of age.

Forth question: Is there an impact on the costs associated with information systems at the Lean production practices in Saudi industrial companies? (The answer to the fourth hypothesis)

The statistical analysis showed that: " There are no impacts at ($\alpha \leq 0.05$) on the costs associated with information systems at the Lean production practices in Saudi industrial companies". (This result is similar to Nayak's., et, al., 2012) which showed that there are significant impacts of the management information system and the decision making process.

Second: recommendations of the study:

In light of the above findings, the study recommends the following:

1. Enact the laws and regulations that contribute to the effective use of costs associated with information systems at the Saudi industrial companies.
2. Develop programs and training courses to improve the skills of workers in Saudi industrial companies.
3. Apply costs associated with information systems in order to improve the production practices of staff and machinery.
4. Assign experienced and competent staff who are proficient in using and applying costs associated with information systems.
5. Conduct more and new research in the same field of study to include other private sector companies and in various times and years.
6. Disseminate the results of the study to the relevant sectors (public and private sectors).

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Appendix

Questionnaire

Dear Respondent,,,,,,

The researcher's is preparing studying , the title is **" The impact of costs associated with information systems at the Lean production practices in Saudi industrial companies**". This questionnaire consists of two parts all of which you are kindly requested to answer

The contents of this survey are absolutely confidential, The respondent identity and responses will not be disclosed under any circumstances.

Thank you for your kind cooperation

Researcher

Part One : This part consists of general data on the respondent :

1-Gender :

 Male Female

2- Number of year of experience:

 less than 5 years from 5 to 10 years

 from 11 to 15 years 16-20 years

 More than 20 years

3-Age : 20-25 Years 26-31 years

 32-37 years 38-43 years

 44-49 years 50 years and older

Part Two : Subject of Study :

Please specify how far you agree that the following factors. by marking " √ " in the square applicable to the statement .

Phrase	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	strongly Disagree (1)
First Section : material requirements					
1. The Saudi industrial companies develop computer hardware to keep pace and satisfy the growing demands and needs of their customers.					
2- The accessories and hardware of computers should fit with the nature of the work.					
3- Computers used in modern Saudi industrial companies are of high speed and quality.					
Second Section : The Technical Requirements					
4- Saudi industrial companies have a master database.					
5-latest versions of the software are available and ready-made.					
6- Development programs are made automatically and continuously in collaboration with programming Saudi industrial companies.					
7- The latest versions of operating systems are available.					
8-Software needed for work help improve and implementation of administrative tasks and they are available.					
9-Software security and protection are available on modern computers.					
10- Saudi industrial companies maintains a backup databases to preserve all information.					

Third Section : human requirements					
11-There is a special section in the Saudi industrial companies for the maintenance of management information systems.					
12-There are specialists who provide solutions to the problems of frequent users.					
Fourth Section : the administrative requirements					
13- Availability of management information systems provides all information needed by the workers in the various sections of Saudi industrial companies.					
14- Availability of management information systems all the information to employees in a timely manner.					
15- Information is updated constantly to suit with the needs of workers.					
Fifth: Section : Lean production					
16- Lean production reduces the number of employees.					
17- Lean production a lot of time required to do the tasks.					
18- Lean production reduces the waste of resources					
19- Lean production help to improve the services provided to the organization clients.					

Any other suggestions:

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