THE RELATIVE IMPORTANCE OF THE CRITICAL SUCCESS FACTORS OF BUSINESS INTELLIGENCE(BI) SYSTEMS IMPLEMENTATION IN JORDANIAN PHARMACEUTICAL COMPANIES

ZAID AHMAD ALABADDI[*1], ARWA HISHAM RAHAHLEH[2], HAITHAM ALALI[3]
MONIRA ABDALLAH MUFLIH[4], SANA'A NAWAF AL-NSOUR[5]
1Department Of Management Information System, Al-Hussein Bin Talal University, Jordan
2 Department Of Business Administration, Al-Hussein Bin Talal University, Jordan
3 Department Of Health Information Management, Emirates College of Technology, United Arab Emirates
4,5 Department Of Business, World Islamic Sciences And Education University, Jordan
*Correspondence Author: 1*zaid.abaddi@yahoo.com

ABSTRACT

The purpose of this paper is to investigate studies based on critical success factors (CSFs) of Business Intelligence (BI) Systems implementations, providing a systematic compilation of CSFs, and presenting a comprehensive taxonomy of CSFs for BI system implementation. Keywords relating to this study were defined and used to search journal databases to compile studies, referring on references to CSFs for BI implementation systems. A total of 64 articles were reviewed to achieve a depth of understanding of the various CSFs already identified by other researchers and presenting a comprehensive taxonomy of CSFs in the area of BI. Then surveying managers in Jordanian companies for the production of human medicines for the relevancy and the importance of the extracted factors. By analyzing all CFSs mentioned in the literature, the taxonomy of BI CSFs implementation was formulated In the total of (21) CSFs were identified. it provides a comprehensive bibliography of the articles published and that can serve as a guide for future research. This paper is significant because taxonomy helps us organize the knowledge And help the researchers to make their search easier. The output of this paper will help future researchers to increase the identification of related studies in the literature review phase of their work.

Keywords: *Business Intelligence (BI) Systems, critical success factors (Csf).*

1. INTRODUCTION

organizations are enthusiastic in implementing business intelligence (BI) systems inside their organizations [1], which have an impact on corporate performance Management [2]. The (BI) is an umbrella that includes architecture, tools, applications, databases, and methodologies [3], and consider as the most significant implementation that can assist to gain a competitive advantage of organizations [4] ; [5].

companies are increasingly dealing with the most ideal approaches to leverage data to make better decisions [6], BI provides decision-makers with information or knowledge and what's they need in new ways to enables them to make quality decisions and support broader organizational level decision-making [7], BI is seen as a reaction to current needs in terms of access to the right information using information technology (IT) empowering making good decisions [8].

With the expanded significance of efficiency and effectiveness of information analysis and decision making at all levels, BI is turning out to be important in the business community. BI systems that developed on the identification and modeling of focused business information are primarily set up to improve the quality of decisions and give convenient answers for structured and unstructured issues [9]. Negash& Gray [10] expressed that BI systems merge analytical tools with databases, and knowledge management to give decision-makers competitive information.

BI is a sub strategic information system that is perceived as a tool to know the business environment and dial to deal with changes [11]. Simultaneously, most organizations start their BI plan with high expectations of success, struggle to align their technology approach to BI with accurate business objectives, and as an outcome, solutions fail to meet business needs [12]. As indicated by Gartner [13] the high global spending on BI systems in their Implementation is not a simple task, it is a complex endeavor, requiring proper assets, understanding business status, estimating organization performance, improving relationships with partners, and making profitable opportunities. according to Pham& et al. [9] the risk of failure is high in implementing BI systems and more than half of BI projects are ended with unfulfilled benefits [14], Despite the complexities in implementing BI systems, there has been minimal research about the CSFs affecting the implementation of BI systems And remain inadequately comprehended [12];[15]; [16] ;[17] ;[9].

The gap is clear [12];[18] and the necessity not only to identify the factors leading to this success but also to prioritize these factors [19], This study narrows the gap in the research by investigating studies based on critical success factors (CSFs) of (BI) Systems implementations, providing a systematic compilation of CSFs and present a comprehensive taxonomy of CSFs for BI system implementation. A total of 64 articles were reviewed to achieve a depth of understanding of the various CSFs already identified by other researchers. Then surveying managers in Jordanian companies for the production of human medicines for the relevancy and the importance of the extracted factors. The importance of this study is highlighted by the identification of the factors that have the most impact on the successful implementation of BI systems that will help to bridge the gap in comprehension and will contribute to both theory and practice.

2.LITERATURE REVIEW

2.1 Business Intelligence (BI)

The concept of BI emerged in the sixties provides the work of Aguilar [20].which is an umbrella term presented by Howard Dresner of the Gartner Group in 1989[21]to describe a lot of concepts, techniques, and processes to enhance business decision making [22];[23].

BI as a new approach in organizational architecture, with the ability of a user to access the correct data at the ideal time to take a correct decision [24]; [25];[26].The primary goal of BI is to make the intelligent accessibility of quick analysts data and provides it to Decision-makers, to make intelligent decisions[27];[28].there is no universally accepted definition of BI. Some portion of the disarray in understanding the concept of BI brings about by chaos in expressions and instruments related to business intelligence. Researchers comprehend and define BI distinctively and from different perspectives. Many researchers defined BI as a broad category of applications, technologies, and processes for gathering, storing, accessing, and analyzing data to help its users making better decisions[29], Moreover, BI was defined as a new approach that helps managers to make quick decisions through understanding their organizations in a better way [30]. Lonnqvist & Pirttimaki [31] defined BI as a managerial philosophy and tool that assists organizations to manage and refine information to make effective decisions, as Vitt et al.[32] defined BI as an approach of management that enables organizations to characterize the valuable information for corporate decision making. Also, Howson [33] described BI as an instrument that permits employees at all levels of an organization to receive and processes data to make intelligent decisions, work productively, and discover opportunities.

From the IT perspective, BI is a new technology that converts data analysis to information to make planning and decision making easier [34]. Golfarelliet al. [35] defined BI as an information system that processes data into information, and afterward into knowledge to encourage decision making. And Carlo [36] defined BI as a mathematical and analytical model that utilizes data from different locations to produce helpful knowledge and improve decision-making. Jourdan et al., [37] pointed out that BI is both a process and a product that is utilized to create useful information to assist organizations progress in the global economy and anticipate the business environment. Williams & Williams [14] extracted that BI is a mix of products, technology, and methods to sort out critical information that management needs to improve returns.

Through the above, all BI definitions have a common matter subsidiary with the reality that BI is a coordinated mix of concepts, methods, processes, databases, applications, technologies and integrated tools to collect, store, analysis and

manage data and give proficient access to empower decision making for an employee to make a right decision at the right time.

2.2 The Critical Success Factors (CSF) Of BI Systems Implementation

The idea of success factors was first presented by Daniel (1961)[38]. CSFs are basic elements for an organization to effectively accomplish its strategies with satisfactory results to ensure successful competitive performance for the organization [39]. Leidecker& Bruno [40] defined CSFs as a lot of conditions or factors that can significantly affect the success of organizations. Yeoh et al. [27] mentioned that CSFs are factors that guarantee the implementation success, missing one will significantly contribute to Driving the project to fail.CSFs are vital for investigating organization weaknesses and strengths [26];[29];[41]. BI has a set of CSFs that differs from those of other IS types which can be perceived as a set of tasks and procedures that ought to be tended to guarantee BI systems success[42];[29];[41], That is implementing a BI system is not a simple activity, rather it is a complex undertakes to require appropriate infrastructure and resources over a lengthy period, facing a lot of obstacles related to BI adoption, so a critical number of organizations often are unsuccessful to gain the benefits of BI[43];[41]. Despite the complexities in implementing BI systems and the fact that BI is Basic for businesses, insufficient academic research has been directed on the CSFs affecting the implementation of BI systems[44];[41];[26];[29];[45];[18]. It is profoundly perceived that BI is significant for research, yet relatively few studies were directed to CSFs of BI [46];[30];[16];[47];[29];[18]. More critically, the value of old CSF studies will decrease with time, technological improvement and innovation adaptation will impact into CSFs of BI research [48] researchers have progressively present criteria to evaluate the implementation success of a BI [49];[50];[51];[52].

3. MATERIALS AND METHODS

Keywords relating to this study were defined and used to search journal databases to compile studies with references to CSFs for BI implementation systems.

the keywords used to search were (Business Intelligence (BI) Systems, critical success factors). Those keywords were chosen as they lined up with the essential research object ideas.

content analysis approach was considered to select relevant publications. A total of (64) articles were reviewed to achieve a depth of understanding of the various CSFs already identified by other researchers and presenting a comprehensive taxonomy of CSFs in the area of BI.

There were several systematic approaches to select the relevant publications with an initial search of the literature taking place in There was a systematic approach to choose significant distributions with an underlying hunt of the writing occurring in January 2020 using databases. All things considered, to guarantee that each important article was distinguished from the past 20 years, from 2000 to 2020,

the following databases were used: Emerald Insight, Elsevier's, EBSCO host, ProQuest. only peer-reviewed articles were adopted.

Then surveying managers in Jordanian companies for the production of human medicines that are registered as members of the Jordanian Union of Pharmaceutical Producers which were a total of 15 companies for the relevancy and the importance of the extracted factors. The sample included the entire study population. The questionnaire was distributed to 80 managers in those companies, and 75 questionnaires were returned.

4. RESULTS AND DISCUSSION

4.1 Csfs For BI Implementation Systems

An aggregate of 64 articles were reviewed to achieve a profundity of comprehension of the different CSFs already identified by other researchers and presenting a comprehensive taxonomy of CSFs in the area of BI implementation systems that clarify in the table (1).

Table 1: The Csf Of Bi System Implementation.

Authors \ Factors	Top Management Support	Data Quality	Vision & Planning	Team Skills	IT Infrastructure	User Involvement	Project Management	Change Management	Resource Allocation	Presence Of Champion	Organization Collaboration Culture	User IT & Analytical Culture	Scalable & flexible system	Continuous improvement culture	Competitive pressure	Integration between BI system & other systems	Compatibility	Relative advantage	Complexity	Selection of vendors	BI Strategic Alignment
[53]	*	*	*	*	*		*	*													
[52]	*	*		*	*	*			*	*											
[14]		*	*		*							*		*							
[54]	*	*	*	*		*	*		*												
[55]	*	*	*	*	*	*	*														
[27]	*	*	*				*	*	*		*	*	*								
[56]	*	*	*	*	*		*		*												
[57]	*	*	*	*	*	*	*	*		*		*	*			*					
[58]	*														*		*	*	*	*	
[6]	*	*			*	*			*	*											
[41]	*	*	*	*	*	*	*	*	*	*	*		*			*					*
[59]	*	*					*		*		*					*					
[60]	*		*	*				*	*				*			*					*
[61]		*	*		*			*		*		*									
[25]	*	*				*	*	*				*									
[29]	*	*	*	*	*	*	*	*	*	*		*		*							
[47]	*	*	*	*	*	*			*		*	*	*								
[62]	*	*	*	*	*	*	*	*		*	*	*		*							
[28]	*					*		*			*				*						
[63]						*		*													
[64]	*	*		*		*	*	*	*	*	*	*								*	*
[65]		*										*				*					
[66]	*	*	*	*	*	*	*	*	*												*
[26]	*	*	*		*	*	*	*	*	*	*		*								

[67]	*	*	*	*	*	*					*	*		*							
[48]	*	*	*	*	*	*	*	*		*	*	*	*	*							
[45]	*	*	*	*	*	*	*	*		*	*	*	*	*				*		*	
[68]	*	*	*	*	*	*	*		*												
[69]	*	*	*	*	*	*	*	*		*	*		*								
[70]		*											*		*						
[71]									*						*		*	*	*	*	
[72]	*	*	*	*	*	*	*	*	*												
[46]	*	*	*	*	*	*							*								
[30]	*	*	*	*	*		*	*	*	*			*								
[73]	*	*	*	*	*	*	*	*	*	*	*		*								
[74]																	*	*	*		
[75]	*	*	*	*		*	*	*	*	*	*	*	*	*	*					*	
[76]	*	*		*	*	*	*	*	*		*	*									
[77]	*	*		*	*				*				*								
[78]	*	*	*	*	*		*		*		*	*									
[16]	*	*	*	*	*	*	*			*	*	*	*	*		*					
[42]		*			*						*		*								
[79]															*		*	*	*		
[80]	*	*									*										
[12]	*		*			*	*	*			*	*									
[81]	*										*										*
[82]	*		*	*		*	*	*		*	*										
[83]									*						*		*	*	*	*	
[7]									*							*					*
[84]	*	*								*					*		*	*	*		
[9]	*	*	*	*	*	*	*	*		*			*								
[85]								*	*	*	*				*		*	*	*	*	
[86]	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				*	*
[15]	*	*	*	*	*	*	*	*	*	*	*	*	*			*	*				*
[87]	*	*			*																
[44]	*			*					*						*		*	*	*		
[88]	*	*		*	*	*	*	*	*	*	*		*		*						
[89]	*		*			*	*	*		*	*		*								
[90]	*							*	*	*			*		*		*		*		
[18]	*	*	*	*	*	*	*	*	*	*											
[91]	*		*				*	*			*		*								
[92]	*			*			*		*	*		*									
[93]															*				*		
TOTAL	**50**	**44**	**35**	**35**	**34**	**34**	**33**	**32**	**32**	**28**	**28**	**22**	**18**	**18**	**11**	**11**	**10**	**10**	**9**	**9**	**8**

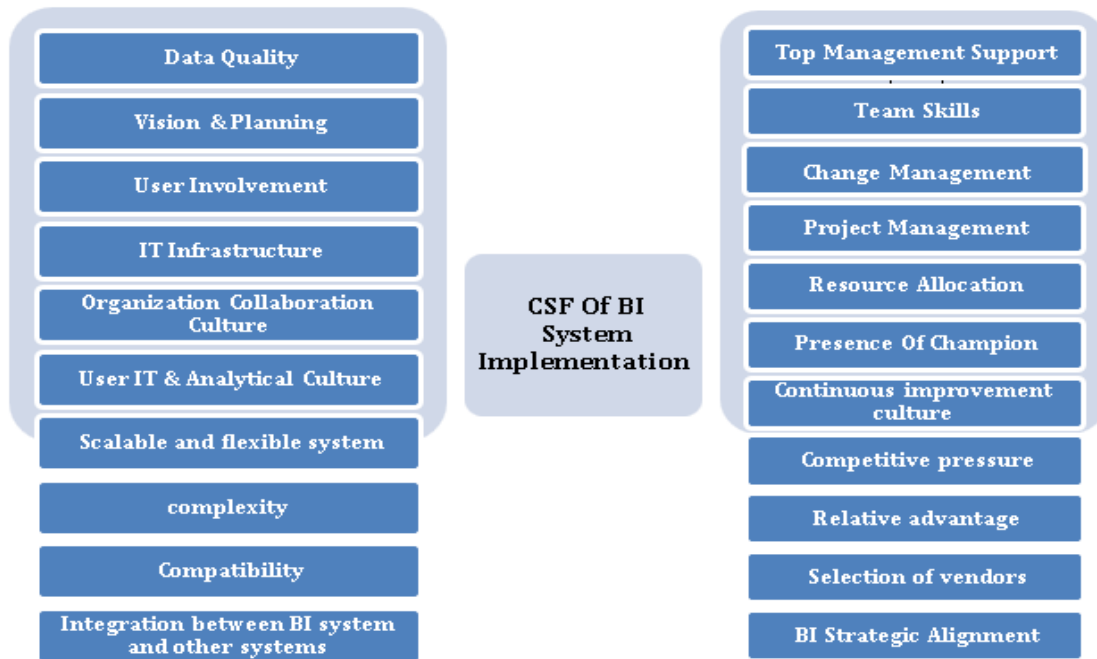Figure (1)shows Most Common Of The CSF Of BI System Implementation.

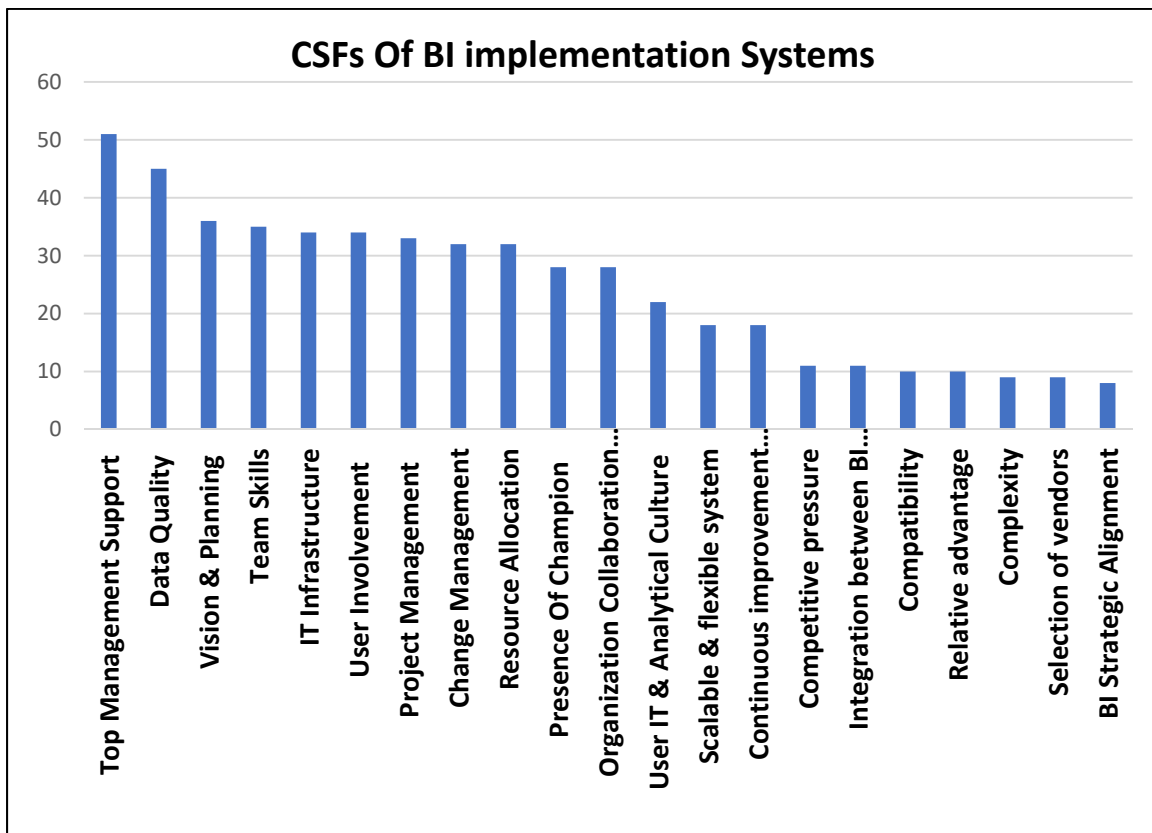*Fig (1): The CSF Of BI System Implementation*

Figure (2). Relative Importance Of The CSF Of BI System Implementation.

Figure (2) depicts frequency clarified for a variety CSF of BI implementation; the most common implementation factors can be seen, with clarity provided in table 1, there are 21 factors of implementation reported repeatedly, and these may be considered as fundamental factors for the implementation of BI, which are briefly discussed next.

1-Top Management Support

is the early stages of any project is to facilitate implementation success and achieve organization goals and gives better performance[87];[90], and provide the BI project with the required resource, skills, and funds, etc…, and minimizing the potential failures in the organization.[76]; [16]; [15]; [86];[59].

2- Data Quality.

The quality of data, which is a basic factor for the successful implementation of the BI system[80];[9];[56];[27];[16];[86].And critical for leveraging BI outcomes and success[12];[15];[84]. Data quality is Data accuracy, comprehensiveness, completeness, consistency, accessibility, reliability, and relevance to organization work[52]. data must be completely coordinated and quality for the implementation of a BI system successfully [84]; [59]; [29].

3- Vision & Planning.

One of the most important and highest ranking factors in the BIS implementation project is the clarity of the vision[61];[41].organizations should have a clear vision and understanding about what is required from the system, estimated cost, reasons and expected benefits that must be achieved with BI investment[56];[86];[27].

A strategic business vision is needed to direct the implementation of BIS[47];[12];[16], as a BIS initiative is driven by a detailed analysis of business needs [41].

Also, a clear vision and business need to increase the chances of winning and keeping a focus on the core objectives of the business [26];[45];[9].

4- Team Skills.

Team skills, knowledge, and experience in different business areas needed for success BIS

implementation [15];[86];[17];[29];[45];[16];[80].

the group needs to incorporate an external expert to overcome the absence of expertise and skills [12];[29];[27];[55].

Therefore, the BI project team ought to have consisted of staff with a strong business foundation [48];[41];[56];[27].

5- IT Infrastructure.

IT Infrastructure is an assortment of physical or virtual assets that help a whole IT environment in the organization And intended to help all the important IT applications and a corporation's strategic plans [7], It consists of servers, telecommunications networks, software, databases, and storage devices [62].

The primary objective of the IT infrastructure is helping in gathering data from various sources like providers, clients, internal and external sources, transferring data from one to another and permitting users to get to the data convenient also, accessible for all in different places [12];[86];[10].

for implementing BI systems, infrastructure ought to be resilient, flexible and scalable to meet future issues driven by business requirements and clients' viewpoint [15] ;[87];[73];[41];[29];[16];[9];[7].

6- User Involvement.

User involvement essential for successful adoption of the BI system [16]; [80]; [12]; [86], and to ensure that user requirements and expectations are available [27]. that user involvement basic for BI achievement particularly in the underlying stage, where necessities and desires are indistinct [52]; [55]; [41]; [26]; [76].

7-Project Management.

Project management supports the success of a BI system implementation [41];[59];[27]. This success is based on having a very clear and well-communicated scope, having realistic expectations and timelines, and having the appropriate budget set aside [61];[25];[29];[73];[16];[29]. The requirements for a BI project are often extendable and developing over time, many additional requirements may be raised in the system

development life cycle [9]. Therefore, researchers recommend that BI projects should be iterative with a quick turnaround between requirements analysis and delivery of outcomes[73];[56];[45];[86].

8- Change Management.

It is a structured approach or technique to appropriately deal with the change from the use of an old system to the use of a new system or to move from the current situation to the new one to ensure that changes are smoothly implemented and achieved benefits of BI system by reducing resistance, it includes the readiness of the different partners for the normal changes, and to help them to adapt and adjust to the progress[15];[86];[45];[67];[12].

9-Resource Allocation.

Resource allocation plays important roles to overcome organizational problems that arise during BI implementations [85]; [84]; [73]; [71]; [47]; [7].The resource allocation is the level of an organization's ability to provide resources (financial resources, technological resources, skilled people, machines, tools and time, etc) through its life cycle[59];[26];[90];[67].

10- Presence Of Champion.

It is characterized as an individual who has high excitement and profound information on the business and the technological innovation and focuses on support the adoption of BI to integrate all business needs and transform them into suitable BI functions [15];[86];[73];[64];[41];[29];[26];[44]. A Champion plays a significant role in the company he leads, supports, and energize the project effectively. He has a good knowledge of both business processes and BIS and undertakes a significant job in the implementation of BI systems [90];[16];[84]; [9];[12]; [30]; [29].

11-Organization Collaboration Culture.

Rosen [94] defines collaboration as working together as a team to create value, the collaboration power comes from the interaction of smart people, thinking through the problem as a group with a comprehensive view and feedback leading to increases in the total value [95]. Collaboration and cross-organization commitment make an important contribution to the success of BI initiatives [42];[59].

To create effective teamwork across an organization, senior managers need to break down any departmental barriers to collaboration, so that they can select the best people [95].

Also, collaboration is not limited to departments within the organization; BI requires the integration of knowledge about customers, competition, market conditions, vendors, partners, products, and employees at all levels [43]. cross-organization collaboration culture has a positive impact on BI dynamic capability, better adoption, and more acceptance for the new BI system [43];[64];[41].

12-User IT & Analytical Culture.

Organizations that embrace the use of information and analytical applications to improve profits or quality of services are better able to lever investments in BI compared to organizations that suffer lack of information, and their decisions are usually driven by the force of personality [86];[14];[62];[75];[76];[77];[16]; [27]. Therefore the more BI users are capable of using information and analytical applications the more they can harness and exploit the BI system and in turn maximizing BI benefits [77];[78];[85];[64];[45];[47].

13-Scalable and flexible system.

Flexible and scalable framework configuration takes into consideration the simple development of the system to adjust it to the advancing of data needs[70].BI flexibility is the measure of association that a BI system has with an assortment of data sources and analytical tools. Flexibility is a key capability to BI success [47];[41];[46];[45];[65], BI systems structure must be capable to coordinate adaptability and extensibility prerequisites [57];[25].

14- Continuous improvement culture.

Continuous Improvement Culture factor is considered as an organizational strength, this means that most of the employees have individual attributes that are helpful to change such as growth and adaptability[97], which is a critical role in system implementation success that provides the ability of the organization to react to resistance and accept adopting the innovations and technology and capable of adapting to the change process, This critically influences readiness of the organizations to switch to BI adequately[14]; [96].

15-Competitive pressure.

Competitive pressure is characterized as the level of pressure that the organization experiences from competitors inside the industry [44];[71];[84];[85]. Competitive pressure urges organizations to search for new ways to deal with raising their productivity and increment efficiency, to achieve competitive advantage [84]; [85]. A competitor's pressure can prompt environmental uncertainty that could expand the pace of technology adoption and innovation in different ventures[85].

16-Integration between BI system and other systems.

The integration of business intelligence with different systems can be characterized as the level of coherence of business intelligence with different systems[29];[7];[59]. The integration can be at the data level, application level, business process level, or client level, while these levels are not confined from one another [65].In this way, these integrations can fundamentally benefit BI users through bringing together a perspective on business data, a solitary customized interface to the user, or a bound together perspective the organization's business processes [70];[41];[65]; [57]; [65], As the principal objective of a business intelligence system is joining data stores for advance analysis to improve the decision-making process[27].

17- Compatibility.

Compatibility is characterized by how much advancement is seen as being reliable with existing values, and needs of potential adoption. Subsequently, a thought that is contradictory with the organization's standards, values, also, practices aren't adopted as fast as those that are compatible [44];[84];[85], If the BI system Compatible with procedures, the technological innovations will spread all the most effectively and unreservedly [71];[84];[85].

18- Relative advantage.

The relative advantage of BI systems implementation is commonly expressed as far as social widely known, economic profitability, and different advantages, for example, cost decrease, savings in time, and improvement in decision making which ordinarily rely upon the nature of the innovation and Expanding the apparent advantages of innovation accelerating its rate of

adoption [71]; [85] ;[58] ;[79]; [84];[45];[44];[84].

19- complexity.

[71]characterized complexity as to how much technology is hard to comprehend and to utilize.BI needs to extricate data from numerous sources preceding being changed and stacked into the central repository so the multifaceted nature of setting up a BI environment is considerable[71]; [84]; [85]. The procedure of setting a domain for the BI system requires some investment and requires all around prepared and devoted staff Thus, clients with a frail IT knowledge require a simple solution that will address their issues [44];[71].

20- Selection of vendors.

Choosing a vendor is a critical factor that influences the adoption of technology [71], the liability of information system vendors to provide the clients with software, hardware, training, and help, to keep up their ideal execution [71];[64];[45];[85].

21-BI Strategic Alignment.

All BI plans ought to be lined up with business strategy To be successful [41];[60];[66];[7], By aligning BI and business strategies, not just business systems achieve development and improvement of BI system in organizations, but BIS strategies additionally lead to a changing of business strategies [64].

4.2 CSF Of BI Systems Implementation In Jordanian Pharmaceutical Companies.

By surveying managers in Jordanian companies for the production of human medicines for the relevancy and the importance of the extracted factors. a Likert scale was used to measure the application levels of critical factors that help in the successful implementation of BI systems. The dispersion of the mean and standard deviation was measured to find out the relative importance of each variable, as seen in Table 3, the five-point Likert scale was chosen because it is one of the most widely used measurement scales and easy to use and to understand. However, to determine the degree of agreement, three levels were specified (high, medium, low), low level 1<2.33, middle-level 2.33-3.66, and high level of 3.67 and above. To describe the study of the characteristics sample gender, age, Academic qualifications level, and years of

experience in the use of BI systems were analyzed as explained in Table (2).

Table 2: Sample Characteristics

Demographic variable	Frequency	Percentage
Gender		
Male	55	73.3
Female	20	26.7
Age		
<35	9	12.0
35-50	40	53.0
More than 50	26	35.0
Academic qualifications		
Bachelor	25	33.0
Master	15	20.0
PhD	35	47.0
Experience		
<10 years	9	12.0
10-15 years	36	48.0
More than 15 years	30	40.0

As shown in table (2), the percentage of males (73.3%) is much higher than the percentage of females (26.7) which indicates that females were the minority of the sample. The second category (Age) shows that the majority of the respondents were between 30-50 years old. However, 47% of the respondents are holding a Ph.D. degree. The majority of the respondents have long experience of which (88%) have more than 10 years of experience. This confirms the efforts of the pharmaceutical companies in Jordan to recruit highly qualified and well-educated human resources.

Table 3: The Arithmetical Means And Standard Deviations Of The Csfs Of BI Systems In Jordanian Companies.

Factors	SD	Mean	Degree of relevancy
Top Management Support	0.58	4.55	High
Vision & Planning	0.50	4.53	High
IT Infrastructure	0.68	4.41	High
Resource Allocation	0.57	4.38	High
Appropriate Team Skills	0.54	4.36	High
Change Management	0.52	4.31	High
Available Data Quality	0.69	4.28	High
User Involvement	0.57	4.26	High
Project Management	0.49	4.24	High
Complexity	0.48	4.23	High
Relative advantage	0.45	4.22	High
Organization Collaboration Culture	0.62	4.21	High
Presence of Champion	0.50	4.20	High
User IT & Analytical Culture	0.70	4.17	High
Continuous improvement culture	0.70	4.15	High
Scalable and flexible system	0.53	4.14	High
Competitive pressure	0.75	4.12	High
Integration between the BI system and another system BI	0.63	4.10	High
Strategic Alignment	0.78	3.97	High
Compatibility	0.65	3.93	High
Selection of vendors	0.65	3.90	High

As shown in Table (3) that the calculation of the means for the most important factors in the implementation of BI systems ranged from (3.90-4.55) with the highest mean being for the factor of "top management support ". This is consistent with Table (1) which showed this factor to be the most frequently recurring in many studies. And The lowest mean was for the factor of " Selection of vendors". it should be noted that all the degree levels of factors were at a high level. This indicates the importance of the factors mentioned in fig 1 and Table 1 in the success of applying the BI systems in Jordanian pharmaceutical companies, despite their uneven order, That The ranking for the most important factors was changed between Table (1) and (3). The study found that Jordanian companies for pharmaceutical manufacturing have the ability and capability to implement the BI systems successfully as well as the ability to overcome the obstacles for the implementation of BI systems.

5. CONCLUSION& RECOMMENDATIONS

5.1 Conclusion

Successful implementation of BI is a critical task for Effective implementation of BI systems and related benefits, Despite the complexities in the implementation of the BI systems, there has been minimal research on the CSFs affecting the implementation of the BI systems, and there is still insufficient understanding of this. There's a clear gap, To narrow the gap, this study aimed to provide a comprehensive taxonomy of CSFs in the field of BI, as well as to present research into CSFs of BI based on a review of academic studies published over the years. A total of 64 articles have been reviewed,

Emerging from quite a large number of sources. Taxonomy of implementation of BI CSFs has been formulated In total (21) CSFs have been identified and the ten most common factors for successful implementation of BI systems have been identified (Top Management Support, Data Quality, User Involvement, Vision & Planning, Team Skills, Change Management, Project Management, IT Infrastructure, Resource Allocation, Organization Collaboration Culture). After surveying managers in Jordanian production of human medications for the relevance and importance of the extracted factors. The study found that despite the uneven order of the factors in comparison, table (1), all the degrees of the factors were high. And that

Jordanian pharmaceutical companies can successfully implement BI systems, as well as the ability to overcome the barriers to the implementation of BI systems. Thus, this article addresses the CSF in the implementation of the BI system to provide a more qualitative foundation to assist practitioners in assessing a large number of potential problems that may arise in both initial implementation and future deliveries.

5.2 Recommendations

A further detailed review of CSFs across the BI lifecycle phases could provide a better understanding of CSF BI implementation systems. Research on whether the identified BI CFS varies across industry sectors is needed. Conduct studies focused on a specific organization that has implemented the BI system and identified the most successful sectors that have applied the BI system.

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