Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/13840
DOI URL: http://dx.doi.org/10.21474/IJAR01/13840

ISSN NO. 2320-5407

RESEARCH ARTICLE

THE CONTINGENCIES OF SETTING UP AN EFFECTIVE BUSINESS INTELLIGENCE SYSTEM: THE CASE OF TUNISIAN INDUSTRIAL COMPANIES

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Manuscript Info

Manuscript History
Received: 30 September 2021
Final Accepted: 31 October 2021
Published: November 2021

Key words:-
BI, Organizational Alignment, Organizational Performance, Industrial Companies In Tunisia

Abstract

The paper offers a conceptual model of the effectiveness of the Business Intelligence (BI) system and organizational performance from a view based on organizational alignment. Considering that organizational alignment mediates the basic relationship between the effectiveness of the BI system and performance. The theoretical framework maintains that the effectiveness of the BI system has a positive impact on organizational performance. The empirical evidence adopts the partial least squares method by exploring the Tunisian context and carrying out a survey of 126 industrial companies in Tunisia that have set up a BI system. Our findings state that the effectiveness of the BI system has a positive impact on organizational alignment, and the latter has a positive impact on business performance. The theoretical and managerial implications are put forward highlighting the human, technological and relational aspects alongside the subject, of setting up the BI system.

Introduction:-

The business environment continues to become more complex. The era of the new economy is revolutionizing our society, which has passed in a few years from the age of information to the age of access. The logic of the use of information takes precedence over the logic of information ownership for companies. The increase in the volume of information, the multiplicity of sources and the development of information technologies impose new constraints on companies. Technological and competitive environments and strategic alliances have modified the relationships of competition and partnership between companies. Information technologies contribute to the development of a new competitive space represented in a virtual environment.

Competition in the real world finds new resources in the virtual world and it is at the heart of this competition that information literacy becomes strategic.

All decisions are based on valuing information and based on exploring the real and virtual environments of the business. It is vital to effectively scan all changes in these two environments and to detect all types of signals. In this context, the experimental approach to information and the rapidity of adaptation to the environment will replace the programmed objectives of long-term planning.

The development of relationships and the increasing complexity of business activities in an increasingly uncertain and changing environment have made businesses more and more sensitive to risks due to an organizational model that no longer corresponds to current issues (WaMandzila EE., Zéghal D., 2009). In fact, hierarchical organizations,

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inherited from old practices, are gradually being replaced by network organizations. Rigid structures give way to new agile and virtual structures. In this context, the scan of the redesigned environment through the Internet is vital for companies that need more than ever to strengthen real-world scan with virtual world scan. This uncertain environment, less and less predictable and more and more aggressive, has put companies before an era of risk (Beck U., 2001; 1986; Beck U., A. Giddens and S. Lash, 1994) and allowed them to change their speech in order to minimize the damage of such situation. It is here that the identification, assessment and management of risks, both real and potential, becomes a vital need for the company to ensure its survival and to adapt to the setbacks of the development of societies.

The company must face the emergence of risks becoming an abstract reality, and this, in a risk management approach that has continued to diversify and multiply. This approach was based, in the normal state and for so long, on increasing confidence and helping to create shareholder value, but when it comes to the risks associated with pandemics or climatic hazards, the situation is different and is becoming more and more critical for companies. This requires a major upheaval in the organizational model to keep it up to date and adapt to crisis situations. It is the fact of introducing innovative tools into the work of the company so that the latter is able to detect risks and prepare for constraints of various kinds. The BI system comes here as an essential and even obligatory technique to found the criteria of sustainability within the organization.

The economic crisis in Tunisia, the effects of which have negatively affected the country's investments and exports, the democratic transition and the upheaval of the political scene are causing a dynamic, uncertain and complex context which negatively influences the competitiveness of the Tunisian company. A situation worsened by the deterioration of Tunisian purchasing power and the development of parallel markets on the one hand and the emergence of the Covid 19 pandemic on the other. In short, the company today has to face several constraints at the same time to ensure its competitiveness and even its survival.

Thus, by setting up a BI system, the company can anticipate crises and prepare effectively. So, with a minimum of effort, the company can have an information base to build its argument based on the positions and editorial angles adopted by its detractors.

Contribution and impact of research

The objective of this article is to present the BI system and its impact on the performance of organizations. Companies operate in a changing world. More and more information, covering all areas of business life, is circulating faster and faster. Political, social, economic, technological situations ... are constantly changing and are therefore difficult to understand by decision-makers ... in recent years, the terms "business intelligence", "strategic scanning", "environmental scanning", "economic intelligence" are more and more common in the language of the economy and business. The environment has become both real and virtual; companies must integrate this profound change into their field of BI and BI scanning. Environmental scanning is also becoming a crucial factor for the success of the industrial and commercial strategy of companies. But this scan must take place in a world dominated by a bloated information supply, where information technology takes precedence over old forms of corporate military intelligence work. In this approach, our work aims to show the importance of BI with respect to the sustainability and continuity of organizations. All this, while examining the role of organizational alignment which presents the willingness and involvement of managers and users for efficient and optimal use of the BI system in order to achieve performance and cope with environmental turbulence.

Structure of the manuscript

This paper is structured as follows: first, we briefly developed the theoretical background and the development of the hypotheses. This is where we start by identifying the degree of the impact of setting up an effective BI system on the performance of the company, and then move on to study the mediating effect of the organizational alignment.

Finally, we move to the methodology's research, results and discussion to finish with the conclusion.

Theoretical background

Business intelligence

BI is a technology that helps companies evolve and face competition by providing a rich information base. It can be considered as the immune system to guarantee the survival of the company (Ben slimene.S and Lakhal.L, 2017). The concept of BI or anticipatory strategic scanning therefore constitutes a framework for responding to this

strategic desire to respond more quickly to market needs and to adapt to unforeseen changes (Ben slimene.S and Lakhal.L, 2017). Lesca (2003) argues that the word strategic means that intelligence information is intended to aid in decision-making that is not repeated identically. The absence of models drawn from experienceputs the decision maker in front of decisions likely to have serious consequences (good or bad) which could call into question the sustainability of the company since the latter is each time faced with a new case. . Suddenly, these decisions are taken in a situation of uncertainty (incomplete information, of poorly established reliability and ambiguous). As for the word anticipatory, it means that the BI system is oriented towards the future which is in opposition to the concepts of retrospective scanning and observatory. The search for information, its interpretation and its processing aim to shed light on the future. In this sense, the information sought as a priority is called anticipatory information (Lesca, and Mancret, 2007).

It is presented as a device for collecting, processing and analyzing information allowing the managers of these companies to make effective decisions: to detect a danger or to seek new opportunities. It can be considered as the immune system to guarantee the survival of the company (Ben slimene.S, 2020). This information gathering system is presented as a solution allowing the company to orient its strategic choices and consequently influence the efficiency of decision-making (Duan et al 2020). The BI system thus allows, to the heads of companies a better understanding of their environments, a speed and an efficiency of the decisions as well as the implementation of an appropriate strategy allowing to seize the new opportunities and perceive the threats of the environment (Pryor et al, 2019). It is presented as a decision-support tool making it possible to respond more quickly to market needs and to adapt to unforeseen changes (Pryor et al, 2019). It is an observation system by which the company is on the lookout for information concerning the socio-economic changes in its environment not only to create business opportunities and reduce risks, but also to act quickly and at the right time (Duan et al, 2020).

The review of the literature review on BI revealed that several authors agree on this definition of scanning as a decision support tool (Pryor et al, 2019, Ben Slimene, 2020). Intelligence provides decision-makers with relevant information, which promotes event anticipation, innovation, customer trends and speed of decisions compared to competitors (Pryor et al, 2019). However, the quality of the information sources influences the output of the BI system in terms of the effectiveness of decisions (Markovich et al, 2019).

The accuracy of the information available to management will determine the levels of uncertainty associated with the business environment (Markovich et al, 2019). However, effective information can only be used well if a company performs an environmental scan (DuToit, 2016). Strategic information helps to improve the competitive position of the company in a turbulent environment and therefore to gain a competitive advantage.

In this context, BI allows for a rigorous analysis of the environment and efficient use of new information (Pryor et al, 2019). The company must learn to control the flow of information before making a decision. The extraction of information from its primary sources should allow the production of knowledge useful to decision-makers in an often unstable business environment that generates a lot of uncertainties and risks (Markovich et al 2019).

The Tunisian example often seems beneficial for understanding this relationship. It testifies to a total interventionism of the leaders and an increased exclusion of the idea of sharing power with its collaborators. This is a typical example which clearly shows the total absence of collective intelligence within Tunisian organizations. In this context, Lakhal and Ben Slimene (2017) assert that any attempt at modernization for the introduction of tools and new techniques is no longer permitted except through the agreement in principle of company managers. The latter can refuse any act of development. Power sharing is no longer acceptable to its leaders and only their visions are applicable. It's as if it's the perfect fit for a good future for the company.

The integrated model of information retrieval (Choo, 2000)

To make this model operational and with a view to improving information management, Choo (2000) recommends designing information systems that make it possible to "understand how individuals interpret the meaning of information, ... understand cognitive styles and limitations as well as how routine operations and emotional defenses can block learning… understand how individuals value information… develop an internal culture that values and encourages information sharing.

It thus departs from the main objective of the concept of strategic anticipatory scanning, which is the anticipation of changes, or even disruptions, and the differentiation of the positioning of the company in its market. It shifts towards

knowledge management and collaborative work tools to accelerate the acquisition of knowledge and intelligence at the organizational level.

Strategic alignment

Strategic alignment between information technology and business strategy is generally considered to be a desirable state of congruence that affects business performance (Sabherwal et al, 2019).

The classic vision of IS management alignment is tied to the strategic alignment of IS, that is to say, the alignment between IS and the competitive strategy of the company. Conceptualization of this vision is usually done using the Strategic Alignment Model, SAM (Henderson and Venkatraman 1993). Due to the multiplicity of the organizational dimension, researchers studying IS contingencies have generally focused on the alignment between the specific organizational dimension and IS.

In a review that studies SI contingencies, Weil and Olson (1989) found that over 70% of studies followed a model that assumed that the better the match between contingency variables, the better the performance. They categorized the contingency variables of interest to IS researchers according to: strategy, structure, size, environment, technology, task and individual characteristics.

Alignment in Business Intelligence projects can be likened to functional integration at the Internal level. We therefore study how this link is treated in this particular case. For this, we are inspired by existing state of the art on the notion of alignment such as (Etien 2007; Avila Cifuentes 2009; Gmati 2011).

Venkatraman's Strategic Alignment Model

For Baets (1992), Henderson and Venkatraman, (1993), MacDonald, (1991), Sabherwal and Chan (2001) business alignment, IS alignment, strategic alignment and structural alignment, are all developed within the limits of the organization. There is still the contextual alignment that requires interaction with forces outside the boundaries of the organization. The degree of each of these five types of alignment, along with organizational strategy, organizational resources, IS strategy, and IT resources, impact organizational performance. Some of the research on the consequences of strategic alignment between business plan and IS has directly examined the effects on business performance (Sabherwal and Chan, 2001) without examining the likely intermediate effects.

Some other studies have focused on other outcomes of IS strategic planning, such as achievement of strategic planning goals (Raghunathan et al, 1994), effectiveness of IS strategic planning (Premkumar, 1994; Segars, 1999) and planner satisfaction (Flynn, 1993), without relating them to the effects on activities. Consequently, little attention has been paid to how the strategic alignment between business strategy and IS strategy is translated into higher quality systems or products which then have effects on the business and overall performance of the company (Earl, 1989).

Development of research hypotheses

Business intelligence

BI qualified as environmental analysis is then presented as a tool allowing the right choice of information for better decision-making (Markovich et al 2019, Pryor et al 2019, Duan et al 2020, Ben Slimene, 2020). It increases business performance by gathering relevant information, sent to the right user, at the right time, for informed decision-making (Markovich et al, 2019). It presents itself as the first link in the chain of perception and actions through which senior executives form personalized interpretations of the environments that influence their decisions, behaviors and performance (Hambrick, 2007). It is essentially a matter of transmitting information to senior management so that they can assess the implications of trends and make the necessary decisions (Pryor et al, 2019).

Thus, the BI system is presented as a decision-support tool influencing the rationality of the decision-maker in his decision-making process. It allows managers a better understanding of their environments, speed and efficiency of decisions that promotes the implementation of an appropriate strategy (seize new opportunities and detect environmental threats) (Pryor et al, 2019). It allows data to be acquired from the external environment for use in problem definition and decision making (Duan et al, 2020).

The BI process includes different stages with the objective of transforming raw information into information useful for decision-making. Although there is variety in the description of the BI process, it seems to be a consensus

outlining five main stages of identifying information needs, collecting, processing, analyzing information and disseminating information serving decision-makers at the operational or strategic level(Cohen 2006, Brouard, 2007; Roulet, 2015, Toit, 2016; Markovich et al 2019; Pryor et al 2019; Duan et al 2020).

The above reasoning motivates the following hypothesis:

H1: the effectiveness of the BI system has a positive impact on the performance of the company

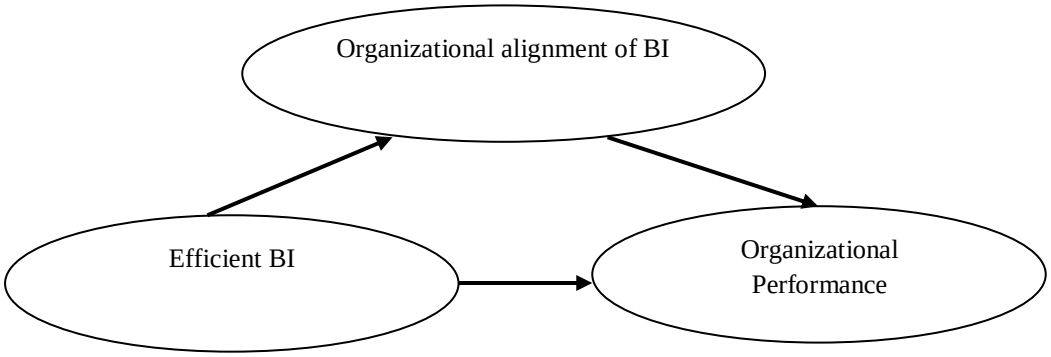
Organizational alignment of the BI system
A vision of the alignment of the BI system and the business strategy defines the extent to which the mission, objectives and plans of the intelligence system are supported and are supported by the mission, objectives and strategy of the company (Carvalho et al, 2008). In addition, it involves the fit and integration between business strategy, information systems, business infrastructure and IT infrastructure (Henderson et al, 1993). A relevant problem (Pereira et al, 2003) is the understanding of what alignment of information and business systems and how to get it and how to maintain it. As part of this research, we are interested in the organizational alignment of the BI system.

Brehm et al. (2001) support the idea that the success of setting up an IS depends on the type and extent of its adaptation, which is only possible when the organization aligns its business strategies with its strategic information systems. As a result, very few studies have addressed the relationship between the effectiveness of the BI system and organizational alignment.

The above reasoning motivates the following hypothesis:

H2: the effectiveness of BI has a positive impact on the organizational alignment of the BI system
H3: the organizational alignment of the BI system has a positive impact on the performance of the company.
Figure 1 presents the model of our research.

Figure 1:- The research model.



Researchmethodology:-

The hypotheses of our research and the positivist paradigm influenced our methodological choices. We found it appropriate to use the quantitative approach for this study. Based on this research approach, we used a single paradigm to post positivism (positivist) paradigm which uses deductive logic and quantitative research methods (Rocco et al. (2003: 21). Unlike the constructivism paradigm social (interpretation) which uses inductive logic and qualitative research methods.

Through our positivist position, we adopt the hypothetico-deductive approach. It's a general specific approach. It is an approach that hinges on formulating a research question based on a general theory: it is the testing of hypotheses in order to invalidate or to confirm them.

We will proceed in our research to the survey method. For Evrard (2003), a sample survey includes the questionnaire which constitutes the measurement instrument.

Data and sample

We choose a measurement scale for each of the variables in our model according to criteria such as the reliability of the scale, its validity, its parsimony and its agreement or divergence with the definitions adopted in this study. The sampling method chosen is the so-called voluntary non-probability method. Our sample is made up of 126respondents.

The choice of the industrial sector in the Tunisian context was guided by the desire to guarantee the technological and organizational development of industrial companies and then a greater chance to learn more about the implementation of the BI system. Our choice is guided by the efficiency of the BI system (Priyor et al, 2017). We have chosen this sector for several reasons the most important is the easy access to information and access to the field. In fact, after the Jasmine Revolution (December 2010), there is a huge political transition that has shaken the economy of the country. The European Union in partnership with the Ministry of Industry havelaunched a PCAM (Support Program for Business Competitiveness and Market Access Facilitation) program.

The PCAM is part of the economic cooperation programs between Tunisia and the European Union, with a view to establishing a free trade area. The program thus provides companies with a wide range of actions that will be implemented with technical assistance and the supervision of renowned national and international experts. Among the actions, strategic intelligence coaching was offered to industrial companies with free implementation.

Variable measures and scale development

The survey consists of Likert scale questions ranging from 1 = strongly disagree to 5 = strongly agree. When conducting surveys, it is believed that common method bias occurs frequently, which is why we used the advice of Guide and Ketokivi (2015) and obtained survey data from carriers and suppliers of the different belonging to said sectors.

First, survey respondents were asked questions in random order to prevent them from perceiving patterns. Second, in the middle of the survey, a short mandatory break took place to reduce respondent fatigue. Finally, given that this article focuses on effectiveness of BI system, organizational alignment and organizational performance, subject that some might consider predisposed to the problems of respondents' social desirability, anonymity was clearly articulated in the header of the questionnaire. (Dalal and Hakel, 2016; Furr, 2011).

Data quality assurance and collection

The data were analyzed by using Structural Equations Modeling (SEM) based on the Partial Least Squares (PLS) approach via Smart-PLS3.0 software.

The PLS approach is optimal for prediction accuracy and robust for complex models since it doesn’t require a large sample size or normally distributed data (Hair *et al.*, 2017). The choice of the type of SEM approaches depends on whether the research is exploratory or confirmatory (Hair *et al*.,2017). In the case of an exploratory study, if applications have little available theory, the predictive accuracy is paramount, and a correct model specification cannot be ensured (Hwang *et al*., 2010; Wong, 2010), the PLS approach is adopted.

The preliminary exploratory study of the model is conducted by IBMSPSS statistics 23 using the principal components analysis (PCA) with varimax rotation to eliminate non-significant items (with outer-loading <0.4). The confirmation study of the model justifies whether the conceptual research model was valid and reliable. The paper discusses the results from the analysis of the measurement model and assesses the structural model.

Test of the measurement model (reliability and validity of latent constructions)

The research model is made up of reflective constructions. We tested the reliability and validity of reflective constructs that obey three steps (Chin, 1998); reliability (see table 1), convergent validity (see table 2) and discriminant validity (see table 3). Reliability is proven when the Cronbach's alpha of each latent construct exceeds 0.7 (Henseler et al., 2009) and the composite reliability (internal consistency) exceeds 0.6 or 0.7, as shown in Table 1 (Fornell, Larcker, 1981).

Table 1:- Reliability of the constructs.

	Cronbach's Alpha	**AverageVariance Extracted (AVE)**	**Composite Reliability (CR)**
Information quality	0.934	0.791	0.950
System quality	0.817	0.732	0.891
Service quality	0.872	0.724	0.913
Effectiveness	0.862	0.879	0.935
Efficiency	0.927	0.932	0.965
Process alignment	0.827	0.853	0.920
Data alignment	0.928	0.932	0.965
User interface alignment	0.854	0.774	0.911

The convergent validity is justified when the outer-loadings of measurement items are 0.7 or higher (see Table 2). Furthermore, the convergent validity signifies that a set of indicators represents one and the same underlying construct, which can be demonstrated through their unidimensionality (Henseler*et al*., 2009). This is measured by the AVE which should be 0.5 or higher (see Table 1) meaning that a latent variable is able to explain more than half of the variance of its indicators on average (Fornell, Larcker, 1981).

Table 2:- The loadings of the items.

	InfQlt	**Sve Qlt**	**SysQlt**	**D Aln**	**U.I Aln**	**ProcAln**	**Effectiveness**	**Efficiency**
Info_Fbi1	0.862							
Info_Qci1	0.872							
Info_Qci3	0.905							
Info_Qri1	0.898							
Info_Qri2	0.911							
Sve_Flex4		0.802						
Sve_Rft6		0.854						
Sve_Qifrs5		0.868						
Sve_Qipfrs8		0.877						
Sys_Impt6			0.821					
Sys_Mpca3			0.874					
Sys_Mpca4			0.871					
Aln_D2				0.965				
Aln_D3				0.966				
Aln_U.I.1					0.852			
Aln_U.I. 2					0.889			
Aln_U.I.3					0.898			
Aln_Proc2						0.924		
Aln_Proc3						0.923		
Effectiveness1							0.936	
Effectiveness 3							0.939	
Effici 1								0.966
Effici 3								0.966

The third test is discriminant validity which implies that "each construct must share more variance with its own indicators than with other constructs in the path model (Hair et al, 2017). It is verified when the square root of the AVE of each construct is higher than its correlations with the other constructs (Fornell-Larcker criterion). As mentioned in Table 3, the results demonstrate the discriminant validity of the latent variables.

Table 3:- Fornell-Larcker Criterion discriminant validity of the constructs.

	DAln	U.I Aln	Proc Aln	Effectiveness	Effici	InfQlt	Sve Qlt	Sys Qlt
DAln	0.966							
U.I Aln U	0.697	0.880						
Proc Aln	0.765	0.818	0.923					
Effectivenes	0.628	0.733	0.757	0.937				
Effici	0.397	0.397	0.515	0.438	.966			
InfQlt	0.703	0.768	0.845	0.650	0.333	0.890		
Sve Qlt	0.624	0.790	0.839	0.755	0.491	0.761	0.851	
Sys Qlt	0.609	0.770	0.846	0.684	0.469	0.789	0.802	0.856

To summarize, we conclude that the PLS outputs support the conditions of reliability and validity of the measurement model.

Results:-

The quality of the model was assessed by examining the coefficient of determination (R^2) which indicates the strength of the link between the independent and dependent variables. To designate a satisfactory model, this indicator must be greater than or equal to 0.2 or 0.3 (Chin, 1998). Our R^2 values are 0.829 and 0.564 for the two model dependent variables, showing very good model quality.

A second criterion Q^2 could give us an idea on the relevance of the model prediction. The following table confirms that all Q^2 are greater than zero. Therefore, this provides evidence that the observed values are well reconstructed and that the model has predictive relevance (see Table 4).

Table 4:- Predictive Relevance Calculations Q^2

	Q^2 (=1-SSE/SSO)
Organizational alignment	0.531
Organizationalperformance	0.336

In addition to evaluating the R^2 values of all endogenous constructs, the change in the R^2 value when a specified exogenous construct is omitted from the model can be used to assess whether the omitted concept has a substantive impact on endogenous constructs (Hair et al. al., 2017). This measurement is called the f^2. The guidelines for evaluating f^2 are that the values of 0.02, 0.15, and 0.35 represent small, medium, and large effects of the exogenous latent variable, respectively. Effect size values less than 0.02 indicate that there is no effect (Hair et al., 2017). The following table shows that the values of f^2 show the importance of the efficiency of the IS intelligence for organizational alignment. Also the importance of organizational alignment and the efficiency of the BI system for organizational performance are felt (see table 5).

Tableau 5:- F^2 calculation.

	Organizational alignment	**Organizationalperformance**
Effectiveness of BI	0.588	0.255
Organizational alignment	-	0.514

Path Coefficients and Significance of Direct Relations

The direct relationship presented by the research is that which exists between the IS Efficiency dimensions BI and organizational performance. In fact, the value of the coefficient is not sufficient to assess the significance of the impact. The T-test is the appropriate technique to reveal the relevance of the trajectory coefficients (see table 6). Smart-PLS offers the priming option to assess this significance.

Table 6:- t-test of the Path coefficients after bootstrapping (resampling: 5000).

Hypo	Relation	Sample	T Statistic (|O/ STDEV|)rt-type	t Values	P Values	Decision
1	Effectiveness BI→organizational performance	0.255	0.148	1.727	0.085	Rejected
2	Effectiveness BI→organizational alignment	0.466	0.097	4.824	0.000	Accepted
3	Organizational alignment→organizational performance	0.514	0.151	3.395	0.001	Accepted

Significant: p**<0.01, p*=<0.05

The summary of the results shown in table 6, which discloses that the hypotheses H1proposes that the effectiveness of BI dimensions will be positively associated with the organizational performance,is rejected based on the significance test. H2 and H3 proposes that the organizational alignment mediates the relationship between theeffectiveness of BI and the organizational performance are confirmed.

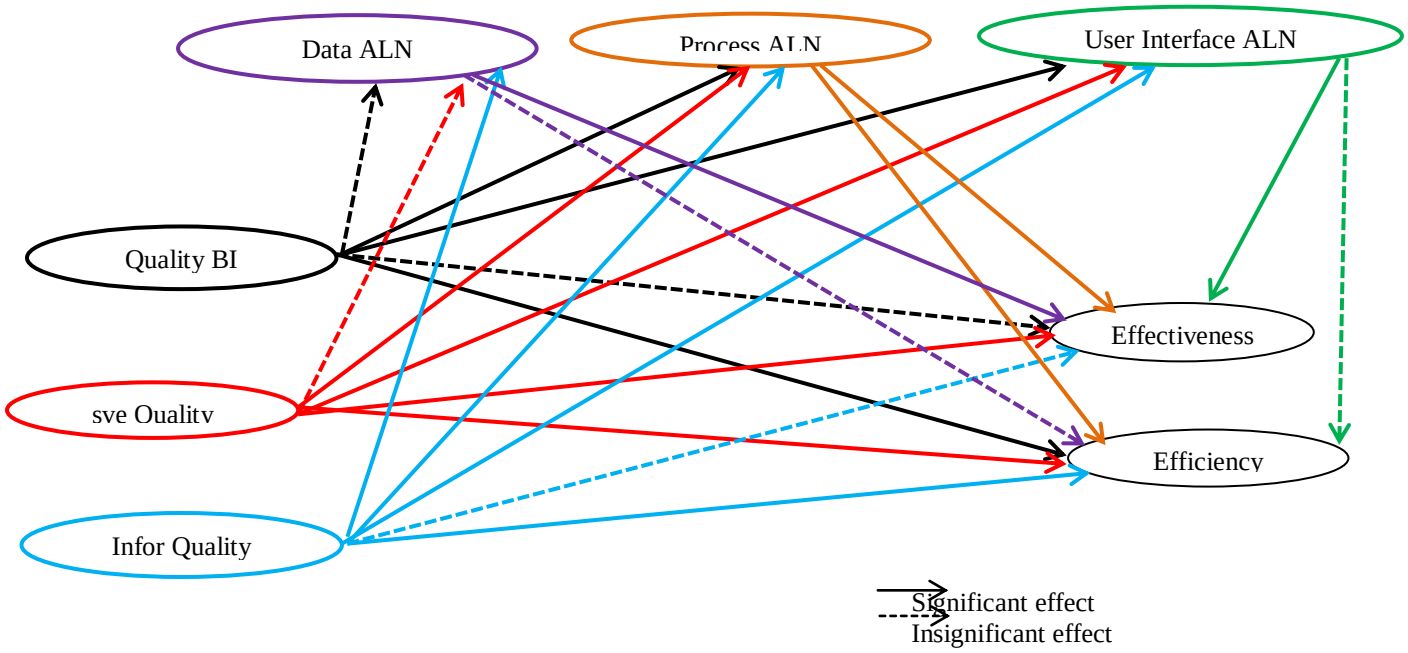
The research results assume that 58.8% of organizational alignment is explained by the effectiveness of the BI system while 25.5% of organizational performance is predicted by the dimensions of the effectiveness of the BI system and 51.4% is explained by organizational alignment.

In addition, the effectiveness of the BI system explains the organizational alignment with its three major dimensions which are the quality of the BI system, the quality of the service provided by the BI system and the quality of the information generated by the said system (which has significant path coefficients).

However, organizational performance is significantly explained by organizational alignment with its three dimensions which are process alignment, data alignment and user interface alignment. In fact, the t-test reveals the significance of these theoretical joints.

The summary of the results is shown in Figure 2, which reveals that the hypotheses are confirmed and the others are rejected based on the significance test.

Figure 2:- Summary of results.



The results of the study reveal theoretical insights into the impact of the effectiveness of the BI system on organizational performance through organizational alignment.

Discussion:-

The trio of quality of BI system, quality of BI service and quality of information provided by BI system as the keystone of the effectiveness of the BI

Several authors have already focused attention on the importance of business intelligence, which makes it possible to target attention on specific axes for the collection of information. It is in the context of this reflection that it seems interesting to say that the BI system must deal with an effective mastery of the collection and processing of information regardless of scientific, technical or technological (Chang and Kong, 2005). Coming to this point, it is indeed to say that the analysis of this information will have to be carried out by qualified persons and experts in the matter. Finally, the file retained from these operations must be sent to decision-makers in order to help them make decisions.

Long before discussing the effectiveness of business intelligence, we would like to recall that the success of information systems (IS) is a measure of the degree to which the person evaluating the system believes that the stakeholder is better off (Kim et al. al, 2002). There are various internal and external interest groups that demand different aspects of the effectiveness of the BI system. The center of measurement of the success of BI lies in studying the effect of the system on individual performance, on the performance of the business process and on the performance of the organization.

The users' perception of the BI function stems from their use of BI products and the services provided by the BI function. Information systems research has traditionally separated the effect of systems and that of information into two distinct concepts (DeLone & McLean, 2003). However, the quality of the system and the information are only attributes of applications and not of the IT department (Chang and King, 2005). Therefore, they are not sufficient to reflect the effectiveness of the BI function as a whole.

The effectiveness of BI as a lever for organizational performance

The majority of studies have found that the effectiveness of information systems is positively related to organizational performance. But few studies have studied the impact of BI on organizational performance. Just like Crowston and Treacy (1986) who showed that in their studies of the management of information systems (MIS), the impact of information technology can be made through the bottom line of the company. However, information systems research has never been able to fully demonstrate the impact of information systems on organizational performance. Inconclusive results are found in most empirical studies, including large and small firms in the industrial and service sectors (Chang and King, 2005).With the exception of Garsombke and Garsombke (1989) who considered computerization to be a significant indicator of performance in small manufacturing firms. Unlike large manufacturers, where information technology is widely used, smaller, more sophisticated manufacturers risked making significant gains in production, sales and profits at the expense of their unsophisticated competitors.

More positive results are obtained in the research component of strategic information systems for competitive advantage (Chang and King, 2005). Indeed, thanks to individual profitability analyzes, the information system was important in terms of improving performance by reducing operating and transaction costs, differentiating between products and services and increasing productivity market share. A debate persisted on the meaning of competitive advantage (Benjamin et al, 1988) and on whether such an advantage can be maintained.

Indeed, in the theoretical model of DeLone and McLean (1992, 2003), the results of information systems are also presented as important catalysts for the effectiveness of BI, because they have often formed the basis of operations and the overhaul of business processes (Chang and King, 2005).

However, the relationship between the implementation of the BI system and organizational performance has not always been positive. Indeed, Ghoshal and Kim, (1986) have found that many companies which have set up BI units have not been able to achieve the "wanted" level of desired performance. In the context of our research, the relationship between the effectiveness of the BI system and organizational performance is negative. This explains that without the managerial involvement and will, the BI system cannot contribute to achieving the desired performance.

Organizational alignment as a bridge between the efficiency of the BI and organizational performance

In standby, the information is so manifold that it is overwhelmed by the product and the process until the production of standards and regulations. In this sense, Volant (1995), presented a whole approach based on the origin and nature of information. The diversity of the origin of information makes it possible to see the information as a whole while thinking of the collection and dissemination of information in this direction and while going through memorization and processing.

The success of a system depends on the dynamic interaction between users, task, technology, structure and environment (Wigand, 2007). In fact, users refer to people working in an organization and their individual differences such as personality, cognitive style, attitudes and motivations. In the context of the success of the BI, the involvement of users and their participation in the system development process, the attitudes of users and top management and the support of top management, have been the subject of much research and have shown their influences on the success of the system (Kim et al, 2002).

The task factor refers to the nature of the work itself. The task can be very complex or simple, standardized or unique and ambiguous or clear.

Technology includes problem-solving methods and techniques and the application of process knowledge to the production of products and services. Both factors, task and system complexity, play an important role in user participation in the success of the BI process (Wigand, 2007). In some situations, when the complexity of the task is low, the user's need for participation is reduced and likely to have less impact on the success of the BI process (Kim et al, 2002).

Wigand (2007) indicated that users at different levels of the organization rate the medium according to the task and its communication style, taking into account the constraints of the organization. In this scenario, users know what to communicate to whom, at what organizational level, and through what media channel. Empirical research on the relationship between tasks and an information system, focuses on the characteristics of the task (complexity, uncertainty, ambiguity, programmability, predictability, repeatability, variety, routine and analyzability of the task) by highlighting the attributes of the technology, the degree of social presence conveyed by the medium, its asynchronous, textual and permanent character, as well as the speed with which it returns). The types of tasks, such as scheduled and unscheduled tasks, have been used to distinguish different types of organizational structures (i.e. hierarchical or flexible) and can be varied depending on the level of the organization (Picot et al. al, 2003). Likewise, the complexity of tasks and cognitive abilities can vary according to the level of the organization and leadership roles, and determines the number of levels in a hierarchy. Some of the earliest research into the uses of information technology (Changet King, 2005) found that use depends on task characteristics, personality traits, status, media attributes, and support styles. The importance of search by job characteristics and media selection is that companies have to reconcile information processing requirements in relation to the various job characteristics and the various channels in order to meet these needs. The key to the puzzle is to find the best possible alignment between the medium, the user and the job.

Alignment in BI projects can be likened to functional integration at the internal level. We therefore study how this link is treated in this particular case. For this, we are inspired by existing state of the art on the notion of alignment such as Etien (2007). The latter classify the alignment work according to the entities that come into play in the alignment such as the strategy of the company, the business processes or the functionalities of the system on the one hand, and on the other hand according to the objective underlying the alignment, that is to say the measurement of alignment or non-alignment and the construction of alignment between two entities that are basically non-aligned.

The evolution of alignment between two entities: the objective is to restore the alignment between two entities that were originally aligned but one of which has undergone evolutions.

As part of our research, organizational alignment mediates the relationship between the effectiveness of the BI system and organizational performance. In addition, the results have shown that this mediation is total. This explains why the investment and the establishment of the effective BI system can in no way guarantee organizational performance if there is not an adjustment and balance between the strategy of the BI system and the strategy of the business. In fact, managerial will and involvement are the catalysts for the successful implementation of this system.

Table 7:- Model for the mediation calculation inspired by Preacher and Haye (2008), (Hair et al, 2017).

Template for Mediation Calculation

	Original sample = standard beta						
	IV- -> Mediator	Mediator --> DV	Automatic calculation	Standard deviation	Automatic calculation	Bootstrapped Confidence Interval	
	Path a	**Path b**	**Indirect Effect**	**SE**	***t-value***	**95% LL**	**95% UL**
M1	0,466	0,514	0,240	0,103	2,325	0,038	0,441
M2							
M3							
M4							
M5							
M6							
M7							
	Note: Zero shouls not cross the Bootstrapped Confidence Interval values						

Conclusion:-

As part of the theme of informational practices of industrial companies, this work aims to understand the BI process within Tunisian companies. This approach consists of adopting a finding in the literature that links organizational performance to information practices. However, most information system research overlooks the effectiveness of the BI system, the key role of which has been addressed especially by work on information systems.Previous researches about BI establishment are few in developing countries. Therefore, our work has contributed to address the lack of research recorded at this level. The major practical contribution of our research is the possibility for firms to analyze their BI evolution, to determine the level of alignment between their strategic, structural and technological dimensions. More importantly, the concept of alignment is a very useful tool for management of the BI system. This research can continuously guide these directions in the alignment process. It can also allow them to have a technological and strategic vision of firms. Currently, the crucial question for any business leader is not only why we must invest in a particular technology such as BI and what technology should be chosen, but what is the real capacity of organization to ensure its coherence, in a complex technology context.

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