Investigating the effect of business intelligence and organizational agility on facilitating the process of production speed and internationalization of Iran Khodro Company

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Abstract

Business Intelligence (BI) refers to the technologies, programs, strategies, and methods used to collect, analyze, integrate, and present business-related information. The whole purpose of business intelligence is to support and facilitate better business decisions. Effective use of BI empowers your business by leveraging actionable data, providing insight into industry trends and facilitating a more strategic decision-making model. BI systems help improve organizational efficiency, which in turn increases productivity and can potentially increase revenue. Considering that in most Iranian companies and other countries of the world, the use of business intelligence is being implemented in large manufacturing companies, therefore, there is a great need to answer the question of what effect business intelligence and organizational agility have on facilitating the process of production speed and between Internationalization of Iran Khodro Company. The current research is among applied research and it is among descriptive non-experimental research in terms of its nature and method. In this research, Cochran's formula was used for sampling and 97 questionnaires were distributed among managers and employees of Iran Khodro Company. The method of collecting information in this research is the use of a questionnaire, as well as the use of library information and referring to the documents available in scientific and authoritative articles and understanding and inferring from this information. The validity of the questionnaire was obtained by formulating the questions based on the theoretical foundations of the research and with the comments and approval of the professors, and in order to confirm the reliability of the questionnaire, Cronbach's alpha coefficient was used, which values are above 0.7, which are acceptable. The average test was calculated on the main and specific hypotheses in SPSS22 software and at a confidence level of 0.95, and the results of data analysis showed that business intelligence and organizational agility have a positive and significant effect on facilitating the process of production speed and internationalization of Iran Khodro Company.

Keywords: Business intelligence, internationalization, organizational agility, Iran Khodro Company.

1. Introduction:

Today's turbulent and changing world has become a stage for organizations to fight for success and leadership (Bidameshki, 2018). Unlike in the past, nowadays, achieving success and gaining a competitive advantage depends on the knowledge of customer demand, competitors' movements and market developments (Priporas, 2019). For this purpose, organizations are able to act successfully that raise their level of knowledge, alertness and awareness. Organizations typically choose classic business intelligence for certain types of reporting, such as regulatory or financial reporting, where accuracy is critical and the questions and datasets used are standard and predictable. Organizations typically use modern business intelligence tools when business users need insight into rapidly changing dynamics, such as marketing events, where immediacy is valued for getting data 100% correct. Although business intelligence does not tell business users what to do. do or what will happen if they take a certain course, Business Intelligence is not just about generating reports. Rather, it is about simplifying the effort required to search, integrate, and query the data necessary to make sound business decisions and a way for people to understand data trends and gain insights from them (Priporas, 2019). In the past, IT professionals were the primary users of business intelligence applications. However, Business intelligence tools has evolved to become more intuitive and user-friendly, and thus a large number of users They are able to use tools in various organizational domains (Gonzales et al., 2019). Business intelligence software is a set of tools used by companies to retrieve, analyze and transform data into useful business insights. Examples of business intelligence tools include data visualization, data storage, dashboard, and reporting (Tavakli; Ab Sieh and Ali Qardashi, 2017). In contrast to competitive intelligence, business intelligence software uses internal data generated by the business rather

than external sources. To make an informed choice, businesses must base their decisions on evidence. The datasets that businesses and their customers generate contain evidence of purchasing patterns and market trends. By aggregating, standardizing, and analyzing data, businesses can better understand their customers, better predict revenue growth, and protect themselves from business problems (Jalali Aghdam and Khademi Shoja, 2017). The proposed research examines the impact of business intelligence and organizational agility on facilitating the process of production speed and internationalization of Iran Khodro Company.

2. Problem statement:

Current business intelligence and business analytics solutions offer applications to help the user at every step of the process to obtain actionable information. It includes applications for data preparation, analysis, data visualization, reporting, and collaboration for use on-premises, on the desktop, in the cloud, and away from the office with mobile capabilities. In order to reduce response time and improve flexibility, a completely new form of organizations must be created. Agility is generally the ability of an organization to understand environmental change and then respond quickly and efficiently to that change. This environmental change can be technological and business changes or changes in customer needs. Agile organizations must not only be responsive to existing changes, but also must be able to gain competitive advantages with a suitable arrangement (Shabanpour; Dostar; Hakimzadeh and Jalalipour, 2018). The use of new technologies, especially business intelligence, gave companies the opportunity to make full use of the huge potential created in the daily primary information system, in addition to analyzing the past data trends, they can predict the future financial performance of the system and many indicators.

By using this technology, companies were able to model customer behavior - not only in terms of using new services, but also from the point of view of managing potential risks (Piraish and Safarkhani, 2017). However, business intelligence has faced key challenges in recent years, including the poor quality of data and the time it takes to process them, the need for high investment in hardware and constant software updates (Shabanpour; Dostar; Hakimzadeh and Jalalipour, 2018). Reducing costs, shortening the time to provide products, high scalability, increasing the ability to share data and unlimited capacity in data storage, improving compliance with global principles and laws, strengthening the fight against money laundering and optimal use of resources have led 65% of the world's companies to the end use business intelligence in 2017 (El-Adaileh et al., 2019). Therefore, in the current situation, the question is, how can the potential of this technology be used more in order to create a competitive advantage, organizational agility, increase product sales, and improve the internationalization process? The proposed research examines the impact of business intelligence and organizational agility on facilitating the process of production speed and internationalization of Iran Khodro Company.

3. Necessity of conducting research:

The recent speed of technology and information in today's world has created fierce and global competition between organizations. In such a way that managers and organizations, for gaining superiority in the world of competition and acquiring communication and information technology; have been required to raise awareness about applying business intelligence and creating a competitive advantage (Ratia et al., 2019). In recent years, creating a competitive advantage has become one of the most important concepts of management, and managers of large companies have made competitive intelligence the main part of their organization's culture; Because the

competitive intelligence approach includes many advantages and benefits compared to other management concepts for the organization. In today's world, creating a competitive advantage is one of the basic principles of a business so that they can increase their capabilities and abilities by analyzing information and increasing awareness (Piraish and Safarkhani, 2017). Currently, in order to survive in today's competitive environment where they face many challenges every day, managers should use the competitive intelligence approach as a powerful tool for their business success. By applying competitive intelligence, it is possible to increase the probability of organizations winning in competitions, because having competitive power is the basis of organizations' survival. Gaining and maintaining competitiveness requires information. Therefore, competitive intelligence is a continuous process that provides useful and effective information to managers and decision makers. Competitive intelligence is assisted by other indicators and concepts such as marketing, economics, strategic management, etc. (Caseiro & Coelhob, 2019). The main focus of competitive intelligence is on information and decision-making, but its scope is very wide, which includes topics such as the company's future plans, market strategies, competitors' plans, competitors' capabilities, business unit strategies, etc. Today, not only large companies, but even many small and start-up businesses also benefit from the benefits of competitive intelligence, and in order to achieve their market share and gain more share, they have included the business intelligence approach as one of their basic principles (Gonzales et al., 2019). We live in an age of technological advancement. Digital advancements have completely revolutionized our daily lives and one of the biggest impacts has been felt in the business world. Companies now have access to data-driven tools and strategies that allow them to learn more about their customers and themselves than ever before, but not everyone is taking advantage of them. Today we are analyzing business intelligence and why it is important to the

success and sustainability of your organization. Business intelligence can help you gain insight into what competitors are doing, allowing your organization to make educated decisions and plan for future actions. In short, business intelligence enables the integration of data from multiple sources, analyzing the information in digest form and then disseminating the information to the relevant stakeholders. This allows companies to see the big picture and make smart business decisions. There are always inherent risks when making business decisions, but these risks are not as prominent or worrisome when implementing an efficient and reliable business intelligence solution. Business-savvy organizations can move forward in an increasingly data-driven environment by ensuring they are prepared for any challenges that arise. (Ramazani and Mansouri, 2017). Considering that in most Iranian companies and other countries of the world, the use of business intelligence is being implemented in large manufacturing companies, therefore, there is a great need to answer the question of what effect business intelligence and organizational agility have on facilitating the process of production speed and between Internationalization of Iran Khodro Company.

4. Theoretical foundations of research:

By examining the background of internal research, we find that Khodabande Lo and his colleagues (2019) have investigated the effect of business intelligence and the use of management dashboards on the performance of managers and innovation in market management and agility of broadcasting companies. The results of this research showed that the use of management dashboards based on business intelligence (business information processing, business skills and business flexibility) has a significant impact on the performance of managers and the agility of companies in the management of the broadcasting market. Also, the findings of the research showed that managerial business awareness

has no significant effect on the performance of managers and the agility of companies in market management. In another research, Nizam al-Islami (2019) investigated the relationship between the speed of internationalization and business intelligence and organizational agility in the shipping company of the Islamic Republic of Iran. With the help of business intelligence tools, it is easy to identify demand and supply trends among your target audience and especially in your industry. This is beneficial, because gaining such good insights into consumer behavior can help a business plan to tailor its strategy, production, production and budgeting. In another research, Kabiri (2018) investigated the impact of information technology infrastructure flexibility on organizational agility with the role of business intelligence as a mediating variable (case study of Islamic Azad University, South Tehran branch). Employee intellectual agility positively affects micro and small business innovation, but this effect is strongly mediated by entrepreneurial leadership. Futurism contributes significantly to innovation and the ability to create community bonds. The main theoretical contribution of this research lies in the emphasized role of intellectual agility of employees in the new initiative of micro and small businesses, in the context of the emerging concept of entrepreneurial leadership. Also, Zare Karizi and Afkhami Rouhani (2018) have studied the effect of business intelligence competency on supply chain agility, considering the mediating role of agility capabilities. In a research, Fanadi and his colleagues (2017) investigated the effect of business intelligence on the agility of the telecommunications organization of Gilan province. Strategic agility is a vague concept that may be counter-intuitive in terms of the underlying issues of agile strategies and may also cause confusion for some researchers. At the same time, the need for agility is very important for companies, especially for multinational enterprises (MNEs) that operate in different countries with different host cultures. Therefore, an in-depth understanding of strategic agility is of great interest to both academics and

managers, as several gaps in the existing literature are evident. In another research, Shir Ali Klishadi (2017) has designed a local model to identify strategic bottlenecks in the use of business intelligence in increasing the agility of the supply chain. In another research, Khalili (2016) investigated the effect of business intelligence (BI) components on the profitability of small and fast-yielding companies (case study: Jahan Saderat Company). Business intelligence based on data mining has been one of the popular and essential tools for identifying business opportunities in sales and marketing of new products. In this research, it has been determined that the presented quantitative correlation coefficient extraction method has higher accuracy, better computational effectiveness and higher predictive power. With the new approach, the relationships related to product relationships and periodic customer demand are revealed, and this can help organizational marketing funds to increase the quality and speed of advertisements, as well as awareness of product relationships. Also, Abbasi (2015) in his bachelor's thesis His senior has investigated the effect of business intelligence on managers' decision-making (case study of oil and gas contracting companies). Academics have argued that data-driven decision-making processes replace intuitive judgments, but the empirical aspects of this claim are not explored. The findings of this research show that decision makers use four techniques to communicate and share intuitive judgments during organizational decision-making, which is based on BI efficiency. In addition, we found that the use of these techniques depends on the familiarity of the decision maker with the group and the convergence of perceptions related to both projects or specific issues in the group. Fadavi Asghari (2015) analyzed the impact of CAMELS indicators on the efficiency of the banking industry using business intelligence tools as a decision support system in his master's thesis. Finally, Abtin (2015) in another study investigated

the effect of business intelligence on the performance of Chabahar Free Trade and Industrial Zone Organization.

5. Research Hypotheses

1. Business intelligence influences agile investment in the market.
2. Business intelligence influences agile operations.
3. Agile investment in the market affects the speed of production and internationalization with the mediating role of cultural differences.
4. Agile operation has an impact on the speed of production and internationalization with the mediating role of cultural differences.

6. Research Method:

Statistical population: The statistical population in this research includes managers and employees of Iran Khodro Company in Tehran.

The sample size formulas and procedures used for categorical data are very similar, but some variations do exist. Since the data are qualitatively and the number of statistical community is unlimited, so the sample size calculation formula is as follows:

$$n = \frac{Z_{\alpha/2}{}^2 p_0(1-p_0)}{\varepsilon^2} \qquad (1)$$

In this study, researcher has set the alpha level a priori at .05, plans to use a proportional variable, has set the level of acceptable error at 5%, and has estimated the standard deviation of the scale as 0.5 Cochran's sample size formula for categorical data and an example of its use is presented here along with explanations as to how these decisions were made.

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2} = 384.16 \qquad (2)$$

Where $Z\alpha_{/2}$ = value for selected alpha level of .025 in each tail = 1.96.

(The alpha level of .05 indicates the level of risk the researcher is willing to take that true margin of error may exceed the acceptable margin of error).

Where (p)(q) = estimate of variance = .25.

(Maximum possible proportion (.5) *1-Maximum possible proportion (.5) produces maximum possible sample size).

Where ε = acceptable margin of error for proportion being estimated = .1

4. Analysis of information

SPSS software was used for statistical analysis and one-sample t-test was used to analyze the statistical hypotheses. We used SPSS 24 to analyze the data. In following the results of test hypotheses are offered:

Testing Hypothesis H1. Business intelligence influences agile investment in the market.

The results of SPSS are shown below:

Table. 1. One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
H1	385	6.8443	1.01973	.17362

Table. 2. One-Sample Test

	Test Value = 5					
				Mean	95% Confidence Interval of the Difference	
	T	df	Sig. (2-tailed)	Difference	Lower	Upper
H1	16.844	384	.000	1.4721	1.09443	1.6832

Testing Hypothesis H2. Business intelligence influences agile operations.

The results of SPSS are shown below:

Table. 3. One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
H2	385	6.8426	1.0964	.17031

Table. 4. One-Sample Test

	Test Value = 5				95% Confidence Interval of the Difference	
	T	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
H2	16.8443	384	.000	1.6843	1.6385	2.0591

Testing Hypothesis H3. Agile investment in the market affects the speed of production and internationalization with the mediating role of cultural differences.

The results of SPSS are shown below:

Table. 5. One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
H3	385	6.7392	1.0793	.19831

Table. 6. One-Sample Test

	Test Value = 5				95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
H3	15.0946	384	.000	1.7931	1.0588	1.7692

Testing Hypothesis H4. Agile operation has an impact on the speed of production and internationalization with the mediating role of cultural differences.

The results of SPSS are shown below:

Table. 7. One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
H4	385	6.7593	1.0658	.19643

Table. 8. One-Sample Test

	Test Value = 5				95% Confidence Interval of the Difference
	T	df	Sig. (2-tailed)	Mean	95% Confidence Interval of the Difference

				Difference	Lower	Upper
H4	17.7443	384	.000	1.9653	1.6883	1.9752

Conclusion:

Business intelligence gives organizations access to information that is critical to success in various areas including sales, finance, marketing and many other areas and sectors. Effective use of BI empowers your business by augmenting actionable data, providing insights into industry trends, and facilitating a more strategic decision-making model. When managers and decision makers must wait for reports to be collected by different departments, data is prone to human error and is subject to being out of date even before it is submitted for review. BI systems provide users with real-time access to data through a variety of methods, including spreadsheets, visual dashboards, and scheduled emails. When using business intelligence tools, large quantities can be captured, interpreted and distributed quickly and accurately. BI systems help improve organizational efficiency, which in turn increases productivity and can potentially increase revenue. Business intelligence systems allow businesses to share critical information across departments with ease, saving time in reporting, data mining, and data interpretation. Sharing information more easily and efficiently allows organizations to eliminate redundant roles and tasks, allowing employees to focus on their work instead of processing data. Sales and marketing teams alike want to track their customers, and most use a customer relationship management (CRM) program to do so. Customer relationship management is designed to control all interactions with customers. Because they contain all customer communications and interactions, there is a wealth of data and information that can be interpreted and used for strategic actions. BI systems help organizations in every field by identifying new customers, tracking and retaining existing customers, and providing after-sales services.

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