Journal of
Value Creating in Business Management
https://www.jvcbm.ir
Volume 2, Issue 4, Winter 2023, Pages 106 to 129

Research Paper

eISSN: 2980-8359

Designing of a Framework for Applying Business Intelligence to Improve the Relationship between Academia and Industry

Hamid Sadeghi[1], Seyyed Abda... Amin Mousavi[2], Ahmad Rah Chamni[3]

1- Ph.D. student of Information Technology Management Department, Qazvin branch, Islamic Azad University, Qazvin, Iran
2- Assistant Professor, Department of Information Technology Management, Central Tehran Branch, Islamic Azad University, Tehran, Iran
3- Assistant Professor, Department of Business Management, Qazvin Branch, Islamic Azad University, Qazvin, Iran

Receive:
12 November 2022
Revise:
19 January 2023
Accept:
27 February 2023
Published online:
18 March 2023

Keywords:
business intelligence,
university and industry,
environment preparation,
data mining;
transfer;
and uploading,
data warehousing,
user interface,
metadata management
and change.

Abstract

The aim of the current research is to identify the dimensions (layers) of a framework for applying business intelligence to improve the relationship between academia and industry. According to its purpose, the research method is applicable; and in terms of implementation, it is qualitative, descriptive and thematic analysis. Fuzzy Delphi method was used to collect information. The statistical population of this research included 12 professors and specialists in the field of communication with industry, selected by the available method, and interviews were conducted with them. According to the analysis that was carried out using thematic analysis method to identify the layers of applying business intelligence to improve the relationship between university and industry, 7 dimensions and 57 indicators were identified and confirmed. Data analysis was done using MAXQDA 2018 software. The results showed that the dimensions of using business intelligence to improve the relationship between university and industry include the first layer/preparation of the environment, the second layer/data collection, the third layer/ETL (extraction, transfer, loading of data), the fourth layer/warehousing Data, and the fifth layer/user interface (UI), metadata management and change management.

Please cite this article as (APA): Sadeghi, H., Amin Mousavi, S. A., & Rah Chamni, A. (2023). Designing of a Framework for Applying Business Intelligence to Improve the Relationship between Academia and Industry . *Journal of value creating in Business Management*, *2*(4), 106-129.

https://doi.org/10.22034/jvcbm.2023.389647.1077 https://dorl.net/dor/20.1001.1.00000000.1401.2.4.6.7

Publisher: Iranian Business Management Association

Corresponding Author: Seyyed Abda... Amin Mousavi **Email:** mousavictb@gmail.com

Journal of
Value Creating in Business Management
https://www.jvcbm.ir
Volume 2, Issue 4, Winter 2023, Pages 106 to 129

Extended Abstract

Introduction

For business intelligence to be useful in a company, it should be promoted from top management and the necessary resources should be provided and decisions should be made based on information. Business intelligence monitoring addresses various issues including investment, project prioritization, project management, and data quality. If monitored, business intelligence can be a powerful driver of business strategy. In fact, business intelligence can have a direct impact on the financial aspects of the organization. The best actions taken in business intelligence can be presented based on laws and regulations as well as suggestions to control the value of business intelligence actions, and this factor leads to more income than capitalization. The Business Intelligence Competence Center is a group of information technology business and analysts who work together to provide business intelligence solutions and organizational needs in the organization (Hoseinloo et al, 2021).

The success of countries in the future will depend on the extent and manner of their growth and influence in their scientific, research and strategic products. With continuous progress in science, technology and culture, countries have been able to continuously improve the level of standards, to the extent that they have brought vast global markets under control of themselves and their new knowledge and technologies in the national and transnational arenas. Applying knowledge and excelling in technology is one of the main indicators of the development of societies (Hamed et al, 2022).

Therefore, the researcher asked the main question: what are the dimensions (layers) of the framework for applying business intelligence to improve the relationship between academia and industry?

Theoretical framework

Many organizations today have adopted business intelligence as a catalyst to meet specific business needs and improve effectiveness. Business intelligence is about how to capture, access, understand, analyze and change one of the most valuable assets of a company to actionable information to improve business performance (Hoseinloo et al, 2021). Business intelligence systems have a great impact on the quality of strategic decisions in order to reduce decision time.

BIS promotes the management quality in organization through new type of technology and techniques of extraction, change, process, and offer data in order to provide strategic information. Therefore, it must be ensured that the organization follows a good BI architecture plan in its implementation process so that BI success is achieved. Business intelligence architecture is a framework consisting of various BI components (for example, data, people, processes, technology and management) and how these components should come together to ensure the smooth operation of a BI system (Ankrah & Tabbaa, 2015).

Zhang et al, (2022) in a research entitled "The effects of the depth and breadth of university-industry alliance portfolio on the growth of new technology-based firms": states evidences from China that in emerging economies, new technology-based firms (NTBF) are often at the same time, make multiple alliances with universities and research institutes to access knowledge and external resources critical to their survival and growth, thus forming University-Industry Alliance Portfolios (UIAP). However, little attention has been paid to this phenomenon. The results show the negative effects of UIAP depth on company growth and the positive effects of UIAP breadth on company growth. Furthermore, the results show that government subsidies weaken the negative relationship between UIAP depth and NTBF growth, along with the positive relationship between UIAP breadth and

NTBF growth. By contributing to previous research on alliance portfolios, university–industry collaborations, and firm growth; this study provides some practical implications for both industry practitioners and policymakers in emerging economies.
Zeraatkar & Moghaddasi (2022) investigated the mediation model of business intelligence in the relationship between process innovation and organizational performance. According to the studies carried out, it shows the fact that hotel management must have strong points such as having specialized and specialized human resources, having specialized medical facilities, having natural resources and attractions, tourism infrastructure, transportation, etc. and the results indicate that process innovation has an impact on business intelligence, and also business intelligence through process innovation has an impact on organizational performance.

Research Methodology

This research is applicable in terms of purpose, quantitative in terms of data collection, and thematic analysis research in terms of research implementation method. To collect information, the fuzzy Delphi method was used in three rounds to find the use of business intelligence to improve the relationship between the university and the industry. The statistical population of this research consists of 12 professors and specialists in the field of communication with industry and, selected using the available method; and primary dimensions, components and indicators were compiled by using the field method and semi-structured interview tool. After analyzing the interviews, a total of 5 dimensions and 57 indicators were identified in line with the research objectives.

Research Findings

Data analysis was done using MAXQDA 2018 software. Based on the obtained results and according to the qualitative analysis, a total of 7 dimensions and 57 indicators have been identified and confirmed. The results showed that the dimensions of using business intelligence to improve the relationship between university and industry include the first layer/preparation of the environment, the second layer/data collection, the third layer/ETL (extraction, transfer, loading of data), the fourth layer/warehousing, and the fifth layer/user interface (UI), metadata management and change management.

Conclusion

The current research has been carried out with the aim of identifying the dimensions (layers) of a framework for applying business intelligence to improve the relationship between university and industry. The results of this research are in agreement with the results of Zhang et al, (2020), Zhang et al, (2022), Basile et al, (2021), Paradza & Daramola (2021), Caloghirou et al, (2021) and Hoseinloo et al, (2021). Zhang et al, (2020) states that BI readiness makes it possible for the organization to recognize its current situation and prepare to make changes. In this layer, along with reviewing and analyzing the current situation, designing and planning is done for the process of technology transfer from university to industry, which is a basis for establishing intelligent business communication between university and industry. Also, the factors affecting the said transfer process are examined. At this stage, proper management of processes, budget allocation, hardware and software resources, skill requirements, and training of employees are provided in order to prepare the conditions for the implementation of BI architecture.
Based on the obtained results, it is suggested for business intelligence to improve communication between university and industry by providing groups with extensive databases to transfer information faster and more accurately.

Based on the obtained results, it is suggested for business intelligence to improve the communication between the university and the information by information verification and refining the complete compatibility of software and hardware by applying a strong filter so that more accurate information is available.