

ORIGINAL RESEARCH PAPER

## The impact of business intelligence on enablers of EFQM excellence model with mediating role of knowledge sharing

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### ARTICLE INFO

#### Article History:

Received 02 September 2020

Reviewed 30 October 2020

Revised 27 November 2020

Accepted 13 December 2020

#### Keywords:

Business intelligence

Enablers

European Foundation for Quality Management (EFQM) excellence model

Knowledge sharing

Structural equation modeling

### ABSTRACT

**BACKGROUND AND OBJECTIVES:** The European Foundation for Quality Management excellence model includes a framework for evaluating the improvement of organizations that excellence organizations must achieve them. Also, business intelligence as a management philosophy and tool helps organization to achieve enduring advantage and organization excellence. Therefore, the purpose of the present study is to investigating the impact of business intelligence on enablers of excellence model with using the mediating role of knowledge sharing.

**METHODS:** According to purpose, the research method is applied and based on data collection is descriptive-survey. The statistical population of this study includes employees of Marvdasht Banks at the Fars province in Iran that 127 respondents were selected based on group sampling. Research data were collected using standard questionnaires (enablers of excellence model questionnaire, Popovic questionnaire for business intelligence and Wang questionnaire for Knowledge sharing) and analyzed through structural equation modeling by Smart-PLS.

**FINDINGS:** Results showed that business intelligence has a positive and significant direct and indirect effect on enablers of excellence model. The direct effect of business intelligence on enablers of excellence model is equal to 0.482. The indirect effect of business intelligence on enablers of excellence model with the mediating role of Knowledge sharing is equal to 0.780. Also, the indirect effect of knowledge sharing on enablers of excellence model is equal to 0.410. The indirect effect of business intelligence on Knowledge sharing is equal to 0.726.

**CONCLUSION:** Considering the research community, it can be said that in order to increase organizational excellence, bank managers should pay special attention to the variables of business intelligence and knowledge sharing and take action towards business intelligence by integrating data, increasing analytical capacity, increasing information quality, access quality of information and analytical decision-making. With these proceedings, not only affect knowledge sharing in the organization, but also increase organizational excellence.

DOI: [10.22034/IJHCUM.2021.02.06](https://doi.org/10.22034/IJHCUM.2021.02.06)

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NUMBER OF REFERENCES

48



NUMBER OF FIGURES

4



NUMBER OF TABLES

6

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Note: Discussion period for this manuscript open until July 1, 2021 on IJHCUM website at the "Show Article."

## INTRODUCTION

The rapid pace of economic, social, and technological developments at both national and international levels has led to instability in organizations, and in addition to the inability of organizations to cope with these developments, has put many large global organizations at risk of being destroyed. In this context, the most important management challenge in organizations today is to move towards improvement and excellence (Haidari et al., 2018). Over the last few decades, Business Excellence Models (BEMs) have appeared as very important management frameworks aimed at determining management practices and results, and leading organizations in improving performance (Dahlgaard et al., 2013; Escrig and de-Menezes, 2015; Mohammad et al., 2011). BEMs involves the development and use of plenty tools and processes in industries such as Total Quality Management (TQM) and EFQM Excellence model (EFQM) (Zhang et al., 2019). In essence, EFQM Excellence Model has been created by European Foundation for Quality Management. This model is a non-normative management framework that is widely used by over 30,000 public and private sector organizations in the world (Para-Gonzalez et al., 2018). The EFQM Excellence Model is a holistic recognizing tool for retaining excellence (Liu and Ko, 2018). The EFQM Excellence Model is flexible in nature and can be used to large and small organizations, in the public and private segments, also to industrial and service companies (EFQM, 2003, 2010, 2013). Therefore, in order to have the opportunity of excellence of the organization, business managers must be able to develop, change or change the organization's resources (Safari et al., 2019). In fact, information is an important element of strategic resources and marketing tools (Nazarpoori et al., 2016), and Business Intelligence (BI) is about utilizing information to make strategic decisions (Jayakrishnan et al., 2018). Enterprises have been investing in technology in an effort to manage the information and to glean knowledge that can be leveraged for an organizational excellence. These technologies are Business Intelligence (BI) and Knowledge Sharing (KM) (Cody et al., 2002). Every day, with the use of innovative technologies, huge amount of data is generated exponentially from big data sources. Data collected from separate sources lead to the

emergence of a variety of structured, semi-structured and unstructured data. Analysis and predictions of this huge amount of data is typically difficult and requires unpredictable period for decision making to the business executives (Reddy et al., 2019). Today, strategic decision making is a challenge that engages many organizations in a dynamic business environment (Richards et al., 2019). Economic organizations are exposed to external forces and must live in an internationally competitive environment, responding appropriately to the increasing complexity of competitors, customers and suppliers, and the globalization of businesses; perhaps the most critical requirement for the success of modern companies is their ability to use all the information available (Safarzade et al., 2009). BI include a way to taking numerous information and showing an effective set of reports that pave information into the premise of business activities, empowering managers to stand on decisive business choices (Reddy et al., 2019). BI include analyzing the vast amounts of data that companies cause and/or purchase in the course of business as a means of improving profitability and competitiveness (Williams, 2016). The main purpose of BI is to enable interactive access to data (and models), to enable manipulation of data and to provide managers, analysts, and professionals with the ability to perform appropriate analysis for their needs. BI analyze past and present data and converts it into valuable information (and knowledge), leading to more informed and better decision making (Sharda et al., 2013). BI and Knowledge Sharing (KS) have some degree of similarity in their objectives. The main purpose of both concepts is to develop environments that can support knowledge workers in decision-making processes and complex problem-solving activities (Rud, 2009). Knowledge and related practices, including knowledge management and sharing, play an important role in empowering the organization, and the proper use of knowledge resources is considered a sustainable competitive advantage (Shakki et al., 2018). Since, the application of organizational excellence models has a decisive role in improving the performance of organizations (Hosseini Ezzabadi et al., 2015; Kafetzopoulos et al., 2019; Para-Gonzalez et al., 2018) but, most Iranian organizations have not yet fully succeeded in implementing the overall dimensions of the EFQM excellence model, despite drawing structured and methodical

models in the EFQM excellence model. While its implementation leads to improved organizational performance. One of these organizations is the bank that improving the performance of banks in the community can have positive effects on the lives of people. It should be said that one of the ways to better implement this model is to study the factors affecting it so that by strengthening them, the model of excellence can be better implemented. Therefore, the present study seeks to investigate the impact of business intelligence on the enablers of the EFQM excellence model with respect to the mediating role of knowledge sharing. The innovation of the present study is the simultaneous use of these three variables and the study of the research question entitled "Does business intelligence have a significant effect on the enablers of the EFQM excellence model in the banks of Marvdasht city due to the mediating role of knowledge sharing?"

#### *Literature Review*

##### *Business intelligence*

For the first time, BI was described by [Dresner \(1989\)](#) of the Gartner Group in 1989 as a set of concepts and methods that improve decision-making using computer support systems. BI is an umbrella term that integrates architectures, tools, databases, analytical tools, applications, and methodologies. The process of BI is based on the transformation of data to information, then to decisions, and finally to actions ([Turban et al., 2018](#)). The term BI can refer to various computerized methods and processes of converting data into information and then into knowledge and insight ([Lonnqvist and Pirttimäli, 2006](#)), which is ultimately used to enhance the quality of organizational decision making ([Williams and Williams, 2010](#)). According to [Reddy et al. \(2019\)](#), BI is the most innovative approach for tracking information and introducing significant data to help corporate executives, business supervisors and various customers that guide them about business choices. [Madsen \(2012\)](#) explains BI as "the integration a set of data related to different systems and resources to optimize business application and comprehension through a user-friendly interface". To answer this question, "Do the company need BI?" [Madsen \(2012\)](#) illustrates, if the company uses data to decision making then the answer is yes. If the company plan is to hire a team of knowledge

analysts then the answer is no, because the BI is intended to provide information to a broad audience. The degree to which the company have to invest and create itself BI program is what should modify ([Madsen, 2012](#)). BI has four major components: 1- A data warehouse and data source; 2- Business analytics, a collection of tools for manipulating, mining, and analyzing the data in the data source; 3- Business Performance Management (BPM) for analyzing performance; and 4- A client interface (e.g., a dashboard) ([Sharda et al., 2017](#)). Also, [Popovic et al., \(2012\)](#) Provide 31 manifest variables and 6 latent constructs for measuring BI, including: 1- Data integration; 2- Analytical capability; 3- Information content quality; 4- Information link quality; 5- Use of information in business analysis; and, 6- Analytical decision-making culture. [Rud \(2009\)](#) identifies four components for the cycle of BI analysis that include: 1- Analysis: in the analysis component, the problem must be identified and expressed accurately. Decision makers then identify critical factors that are related to the perceived components in order to create a mental representation of the phenomenon under analysis; 2- Insight: this component will enable decision makers to understand issues better and more deeply. 3- Decision: in the third component, the knowledge acquired in the second component is transformed into decision making and subsequently into practical action. The availability of BI methods makes it possible for analysis and insight components to be implemented more quickly in order to make more effective decisions that are appropriate to an organization's strategic priorities. 4- Evaluation: the fourth component in the BI cycle is performance measurement and evaluation. In this component, several criteria are designed that are not limited to the financial aspects but also, define key performance indicators for different parts of the organization.

##### *EFQM excellence model*

The EFQM excellence model includes a comprehensive and integrated approach through which strategic, managerial, and operational control processes are implemented ([Kafetzopoulos et al., 2019](#)). This model was proposed in 1988 by 14 major European companies. Their goal is to make European companies aware from that excellence is essential to the process of continuous improvement to help European companies become more competitive in

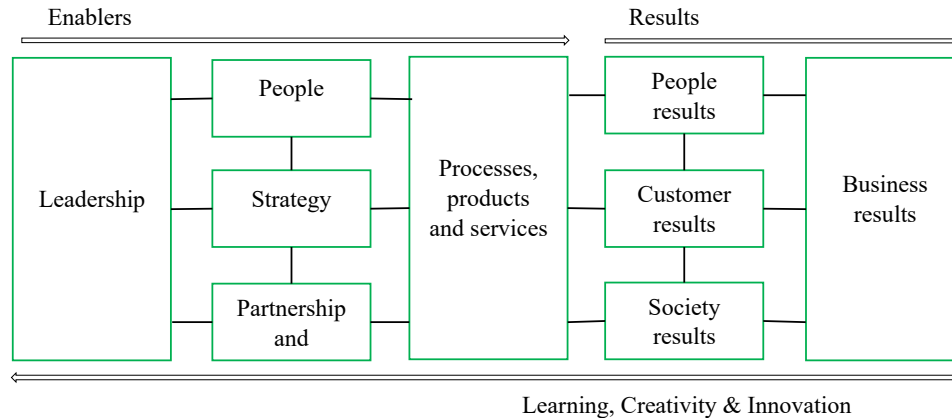


Fig. 1: EFQM excellence Model. Source: EFQM (2013)

global markets (Para-Gonzalez *et al.*, 2018). Excellent organizations show a high level of performance and move in the direction of meeting the expectations of all their stakeholders which is achieved through three sets of integrated components (EFQM, 2012):

1- The fundamental concepts of excellence: To achieve sustainable excellence in any organization, eight fundamental concepts of excellence are described. These concepts can be used as a basis for describing the characteristics of an organizational culture in order to create a common language for senior management (EFQM, 2012). The fundamental concepts of excellence include: results orientation; customer orientation; leadership and consistency; management by processes; development and involvement of people; development of alliances; continuous process of innovation, learning and improvement and organizational responsibility (Calvo-Mora *et al.*, 2015).

2- The criteria: According to Fig. 1, EFQM Excellence model based on nine criteria is expressed in two sections. Enablers include Leadership, Strategy, People, Alliances and Resources, Processes, Products and Services. Results include Customer results, People results, Society results, and Key performance results. Enabler criteria show how things are done in the organization, the results criteria indicate the achievement of output from the implementation of empowerment criteria (Para-Gonzalez *et al.*, 2018). Enablers shows how the organization works, while the results show the achievements of stakeholders so that they can be measured targeted (Zhang *et al.*, 2019).

3- The radar logic: This logic is a kind of structural scheme for self-assessment based on EFQM model. Elements of this approach include deployment, assessment, and refinement, which provide evidence of how the organization operates (Calvo-Mora *et al.*, 2018). Suarez *et al.*, (2017) describe the EFQM excellence model as a non-deterministic framework that analyzes the relationships between what an organization does (Enabler criteria) and its results that it can achieve. As clients, employees, society and other key results assuming that there are different approaches to reaching excellence. The EFQM excellence model is a descriptive and extensible model that describes the quality of implementation and how to manage organizational processes in most areas, without prioritizing actions and determining any superiority in their implementation (Safari *et al.*, 2015). This model is designed to help organizations for change and realize continuous improvement using total quality concepts and enables managers to increase the effectiveness of their leadership and decision-making capabilities and to maximize organization beneficiaries' satisfaction, identify positions for their actions. In other words, the EFQM excellence model assists organizations in understanding their current status as well as applying continuous improvement flow modeling and guidance through evaluation based on the model's nine criteria and based on eight fundamental concepts (Safari *et al.*, 2019).

#### Knowledge sharing

A community is formed when a group of people

come together with the same concepts, goals, or similar interests. However, the generality and success of such a society depends on whether there are positive and ongoing interactions between members. Interactive content usually includes personal information, experience, and recombinant knowledge. Hence, the key to the success and popularity of communities in the Knowledge Sharing (KS) lies with members of the community (Chen and Kuo, 2017). KS refers to the process of transfer, communication, interaction and coordination of knowledge or expertise and helps to improve productivity, absorption capacity, innovation and maintain the competitive advantage of the organization (Liao et al., 2007; Wang et al., 2014). KS is described as the exchange or dissemination of explicit or tacit data, ideas, experiences, or technology between employees (Al-Kurdi et al., 2018). The process of explicit knowledge sharing involves the sharing of codified knowledge that can be created and transmitted in an organization. This type of knowledge can be found in documents and reports, procedures and policies, or handbooks and databases. On the other hand, tacit knowledge includes knowledge that is in people's minds but is difficult to express symbolically or in writing form. This knowledge is related to experience and expertise, understanding, insight, intuition and "more

than can be said" (Wang et al., 2016). Creating a knowledge-sharing context is critical to improving the performance and accomplishing the organization's goals (Sabzi et al., 2019). KS in organizations improves the process of individual learning, develops creativity and thus increases individual performance. On the other hand, if institutionalization of the process of the KS doesn't occur in the organization, the organization will gradually lose its competitive advantage (Samiei and Salavati, 2015). Therefore, KS is critical issue to the success and excellence of an organization and is a sustainable competitive advantage for organizations. According to the theoretical foundations of research, business intelligence emphasizes the use of information, and since organizations need information to obtaining and sharing knowledge that can be used for organizational excellence, so business intelligence can affect organizational excellence by creating and sharing knowledge. Based on the literature and the theoretical foundations of the research, the conceptual model is plotted in Fig. 2.

In the above conceptual model, business intelligence as an independent variable, enablers of EFQM excellence model as a dependent variable and knowledge sharing as a mediating variable, and according to the conceptual model, research hypotheses were formulated as follows:

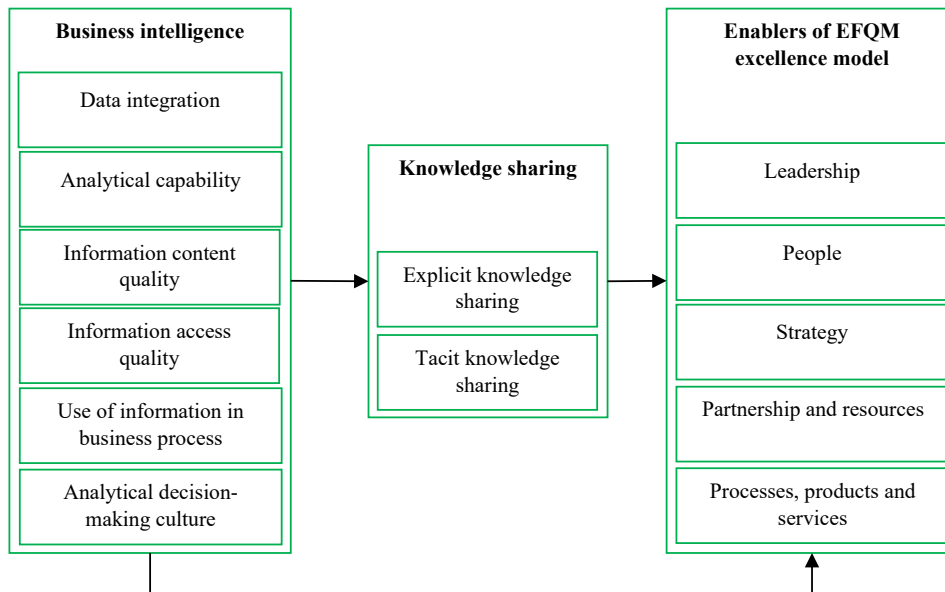


Fig. 2: Conceptual model of research

H1: BI has a significant impact on KS.

H2: BI has a significant impact on enablers of EFQM excellence model.

H3: KS has a significant impact on enablers of EFQM excellence model.

H4: BI has a significant impact on enablers of EFQM excellence model due to the mediating role of KS.

Today, many organizations want to establish a cycle of continuous improvement, achieve organizational excellence and enhance customer satisfaction. The banking system, as one of the service organizations, needs to provide quality services to its customers, and business intelligence can help in providing efficient services and along with it, creating a transcendent organization. In this way, the role of knowledge sharing cannot be overlooked. The current study has been carried out in Marvdasht city of Fars province in February 2020.

## MATERIALS AND METHODS

The purpose of the present study is investigating the impact of BI on enablers of EFQM excellence model considering the mediating role of KS. According to this purpose, the research method based on purpose is applied and it is a descriptive research based on data collection. The present study is also based on the relationship between research variables is correlation method and specifically based on structural equation modeling using Smart-PLS software. Smart-PLS software was used to complete the data analysis and estimation for present study. This software is useful for low volume data and in this software, there is no need for data to be normal. The statistical population of this study includes the employees of the banks of Marvdasht city of Fars province in Iran. Krejcie and Morgan (1970) table were used to obtain the number of samples and 127 people were selected as group sampling and 127 questionnaires were distributed among the respondents. 110 questionnaires were returned. Out of 110, 10 responses were incomplete, and, hence, were discarded from further analysis. Making a final sample size of 100 with a response rate of 79%. The sample included 71% married bankers and 67% were male and the rest were female. All of the respondents were Muslim. The main tool for data collection is the standard questionnaire. For this purpose, have been used standard questionnaires that repeatedly used and verified by various

researchers. Standard questionnaire that developed by European Foundation of Quality Management was used to measure the enablers of EFQM excellence model. Components of this questionnaire included: leadership, people, strategy, Partnership and resources and Processes, products and services. Popovic et al., (2012) standard questionnaire was used to measure BI variable. Components of this questionnaire include: data integration, analytical capability, quality in information content, quality in information access, Application of information in the business process and analytical decision-making culture. Finally, Wang et al., (2014) standard questionnaire was used to measure KS variable. Components of this questionnaire include: explicit KS and tacit KS.

## RESULTS AND DISCUSSION

In the present study, structural equation modeling has been used to analyze the research data. For this purpose, Hulland's (1999) two-step method has been used: 1- measurement model; 2- structural model.

### Measurement model

In this section, reliability and validity tests were performed to ensure the effectiveness of the model and the validity of hypotheses testing. Cronbach's alpha and composite reliability values are used to measure the reliability of the survey tool. According to George and Mallery (2016), the construct reliability is approved when the Cronbach's alpha and composite reliability are above 0.7. Table 1 shows the Cronbach's alpha and composite reliability amounts.

Structural validity should also be considered. For this purpose, convergent validity and discriminant validity are used. The AVE index is used to evaluation convergent validity and Fornell and Larcker's (1981) test is used to evaluation divergent validity. According to Fornell and Larcker (1981), convergent validity is confirmed when AVE amount for all variables is greater than 0.5. Table 2 shows the AVE amount. As Table 1 shows, AVE index for all dimensions is convenient.

Discriminant validity was tested following Fornell and Larcker (1981) who suggested that discriminant validity is achieved if the square root of the AVE is greater than all the correlations in the same row and column of the particular construct. As shown in Table 3, discriminant validity of constructs was achieved.

Table 1: Cronbach's alpha and composite reliability values

Dimensions	Cronbach's alpha	Compound reliability
Business intelligence	0.938	0.944
EFQM excellence model	0.943	0.949
Knowledge sharing	0.912	0.925

Table 2: AVE index

Dimensions	average variance extracted
Business intelligence	0.609
EFQM excellence model	0.659
Knowledge sharing	0.690

Table 3: Discriminant validity test (Fornell and Larker, 1981)

Dimensions	Business intelligence	EFQM excellence model	Knowledge sharing
Business intelligence	0.781		
EFQM excellence model	0.780	0.812	
Knowledge sharing	0.725	0.760	0.831

Table 4: CV-Redundancy and CV-Communality indexes

Dimensions	CV-Red	CV-Com
Business intelligence	0.361	0.361
EFQM excellence model	0.297	0.432
Knowledge sharing	0.239	0.459

Finally, cross-validated should be considered. For this purpose, it should be used from Cross Validated Redundancy (CV-Red) and Cross Validated Communality (CV-Com) indexes. The communality index measures the quality of the measurement model for each block and the redundancy index measures the quality of the structural model for each endogenous block (Tenenhaus *et al.*, 2005). CV-Red and CV-Com have to be positive to confirm structural validity. Table 4 shows that CV-Red and CV-Com is achieved.

#### Structural model

The structural model is a model in which the relationship between the independent and dependent variables is considered. In fact, this section involves evaluating research hypotheses. Fig. 3 shows the evaluation of the conceptual model. Also, Fig. 4 shows the t statistics values.

The criteria considered in the structural model are:

1- R-squared ( $R^2$ ) criteria: This criterion indicates the extent of the impact of one or more independent variables on a dependent variable and the values of 0.25, 0.50, and 0.75 are considered as standard values for detecting weak, medium, and strong values (Hair *et al.*, 2011). Table 5 shows that  $R^2$  criteria for EFQM excellence model and KS are 0.688 and 0.527.  $R^2$  amount for EFQM excellence model indicates that more than 68% can be measured by BI and KS. Also, table 5 shows that  $R^2$  amount for knowledge management is 0.527 which is more than 52% predictable by BI.

2- Q-squared ( $Q^2$ ) criteria: Another assessment of the structural model involves the model's capability to predict. The predominant measure of predictive relevance is the Stone–Geisser's  $Q^2$ , which postulates that the model must be able to adequately predict each endogenous latent construct's indicators (Hair *et al.*, 2011).  $Q^2$  Criterion specifies the predictive power of the structural model in the dependent variables. Values of 0.02, 0.15, and 0.35 are defined



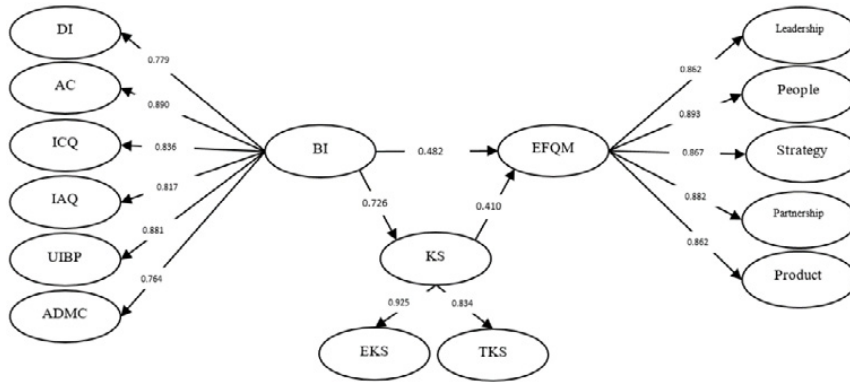


Fig. 3: Evaluation of the conceptual model

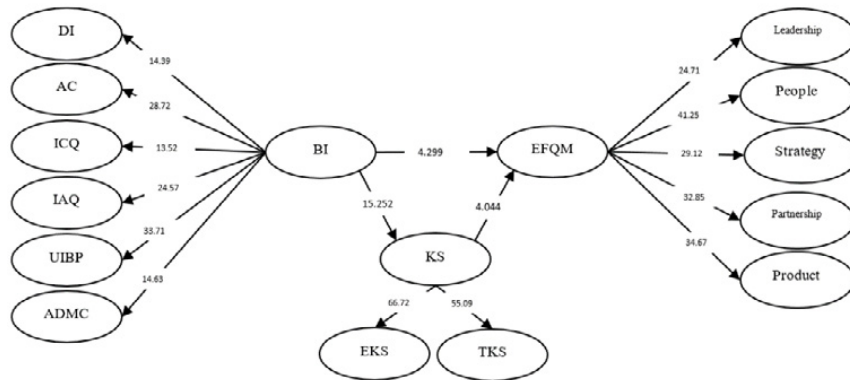


Fig. 4: t statistics values

as low, medium, and strong predictive power. Table 5 shows that dimensions have strong predictive power.

3- F-squared ( $F^2$ ) criteria:  $F^2$  criterion defines the severity of the relationship between the dimensions. Whatever this criterion is higher indicates the higher the severity of the relationship. The values of 0.02, 0.15, and 0.35 indicate the measurement of the weak, medium, and strong influence of an independent variable on a dependent variable (Mousavi Jarrahi and Azizie, 2019). Table 5 shows that the impact of BI on KS is very weak, but the other two relationships have a higher-than-average impact.

4- Goodness of Fit (GoF) criteria: To evaluate the overall fit of the model, GoF criterion is used (Tenenhaus et al., 2004). GoF equation is shown in eq. 1.

$$GoF = \sqrt{\text{communality} \times r^2} \quad (1)$$

Amounts of 0.01, 0.25 and 0.35 are considered as weak, medium and strong indicators for this criterion (Tenenhaus et al., 2004). According to table 5, amount of GoF is 0.411 and shows that the model fit is strong.

5- Path coefficients and t statistics: In this section, research hypotheses are reviewed. Critical t-Values for a Two-Tailed test are 1.65 (significance level = 10 percent), 1.96 (significance level = 5 percent), and 2.58 (significance level = 1 percent) (Hair et al., 2011). Table 6 shows the analysis of research hypotheses.

According to Table 6, the t-value amount for all the hypotheses is higher than 1.96 and therefore the hypotheses are significant. The result of first hypothesis about the relationship between BI and KS are fully consistent with previous studies (Shokry and Ghazizadeh, 2020; Moscoso-Zea et al., 2019). Since one of the most important bases for KS and transferring in organizations is information and knowledge that



Table 5: Fit criteria for structural model

Dimensions and path	R-square	Q-square	F-square	Goodness of Fit
Business intelligence	-	0.361		
EFQM excellence model	0.688	0.432		
Knowledge sharing	0.527	0.459		
Business intelligence > EFQM excellence	-	-	0.256	0.411
Business intelligence > Knowledge sharing	-	-	0.004	
Knowledge sharing > EFQM excellence	-	-	0.353	

Table 6: The analysis of research hypotheses

Impact	Direct effect	Indirect effect	Total effect	t-value	Condition
Business intelligence > knowledge sharing	0.726	-	0.726	15.25	Accepted
Business intelligence > EFQM excellence model	0.482	-	0.482	4.29	Accepted
Knowledge sharing > EFQM excellence model	0.410	-	0.410	4.04	Accepted
Business intelligence > knowledge sharing > EFQM excellence model	0.482	0.298	0.780	14.64	Accepted

flows in the organization, so this information must be have high quality content in order to be a competitive advantage for organization. Also, the quality of the knowledge and information transfer network in the organization, the integration of information and knowledge, and the quality of communication between members of the organization are important issues of KS in the organization that is the focus of BI. Therefore, with emphasizing this importance, the first hypothesis shows that BI has a very strong impact on KS, and by creating appropriate information platforms in the organization, it helps to develop more KS among the members of the organization. Regarding the second hypothesis, can be say, in most cases, BI has been conceptualized as the term in information technology. This concept not only encompasses information technology capabilities, but also affects the leadership abilities and capabilities of employees. On the other hand, BI has a great impact on such things as the vision and strategy of the organization and the production processes of the organization, which to a large extent affect organizational excellence. Hence, the second hypothesis of the research is taken into consideration and the result of the analysis of the second hypothesis of the research shows that BI has a significant impact on the enablers of EFQM excellence model. The result of this study about the relationship between each two variables are fully consistent with previous studies (Taghvaeeyazdi and Niaz Azari, 2020). Regarding the third hypothesis, the result of this study about the relationship between

KS and the enablers of EFQM excellence model are fully consistent with previous studies (Criado-García et al., 2019; Heidari et al., 2018; Amirkabiri and Sadeghi, 2015). Typically, Leaders will determine business direction based on influences and/or direct knowledge about customer’s needs, product trends, technology advances, competitor’s pressures, shareholders objectives, financial performance and market share being the prime drivers. Knowledge, therefore, has a decisive role in the decision making of leaders and consequently affects organizational excellence. Sharing of knowledge assets will lead to quicker and smarter customer solutions. Thus, organizations dedicated to the enablers of EFQM excellence model can increase knowledge capabilities that may make a difference. Hence, KS can play a decisive role in building knowledge capabilities and consequently organizational excellence. The EFQM Excellence Model helps organizations take effective steps in all aspects to improve efficiency and effectiveness, thereby providing customer and stakeholder satisfaction. Also, organizations that prioritize BI provide employees with the opportunity to learn and be creative by engaging employees and engaging them in the workplace, ensuring long-term success. KS is like a bridge that links employee learning and creativity to efficiency, effectiveness, and ultimately customer satisfaction. According to the results of data analysis, paying attention to business intelligence can be effective in increasing organizational excellence. This effect can be both

direct and indirect and mediated by other variables. In this study, the effect of the mediating variable of knowledge sharing was investigated. Considering the research community, which is a bank, it can be said that in order to increase organizational excellence, bank managers should pay special attention to the variables of business intelligence and knowledge sharing and take action towards business intelligence by integrating data, increasing analytical capacity, increasing information quality, access quality of information and analytical decision-making. With these proceedings, not only affect knowledge sharing in the organization, but also increase organizational excellence. Also, strengthen organizational excellence by strengthening knowledge sharing among employees.

## CONCLUSION

The purpose of this study was to investigate the impact of BI on enablers of EFQM excellence model that for this relationship was used KS mediator variable. In relation to the evaluation of the first hypothesis, analysis results showed that BI has a positive and significant effect on KS. The value of this relationship was 0.726. The results of the second hypothesis showed that the impact of BI on enablers of organizational excellence model is moderate. The value of this relationship was 0.482. In the third research hypothesis, the effect of KS on the enablers of EFQM excellence model was investigated. The results of the analysis of this hypothesis showed that KS has a significant effect on the enablers of EFQM excellence model and this effect was almost average. The value of this relationship was 0.410. In the fourth hypothesis of the research was investigated to the impact of BI on the enablers of EFQM excellence model with regard to the mediating role of KS. The results of the fourth hypothesis showed that BI due to the mediating role of KS has a very strong impact on enablers of EFQM excellence model. The value of this relationship was 0.780. Also, the reliability and validity values of the measuring instruments and, on the other hand, the model fit indices were within the acceptable range.

## Suggestions

Based on what has been achieved:

1- To promote organizational excellence, use

information technology prioritize for banks to improve the quality of information and communication networks.

2- To avoid confusing employees and members of the organization, it is suggested to collect organizational data into central database and use functional dashboards.

3- It is suggested to reduce the uncertainty in decision making and improve the operational efficiency of employees, use information analysis processes such as trend analysis and scenario. Also, recommended for researchers to examine other variables as mediating variables in the relationship between business intelligence and enablers of organizational excellence model.

## Limitations

The use of a deductive reasoning approach was limitation of the study, because it is always unlikely for the researchers' sake to be value-free, neutral, and objective. Individuals experience the world through their own perception and lens. The use of cross-sectional data limits the causal inference of the result. A longitudinal survey might prevent the result from the problem of causality. One way to overcome this issue is to split the measures of variables by time. The small sample size ( $n = 100$ ) shows another constraint on the findings. A larger sample size is useful for the further investigation.

## AUTHOR CONTRIBUTIONS

F. Ahang has reviewed the research literature, prepared the required resources and edited them. A. Hosseini has referred to the banks and collected the required data. H. Ghaffari performed the methodology and analyzed and prepared the data. A. Keshtegar and M. Ghasemi helped in the literature review and manuscript preparation.

## ACKNOWLEDGMENT

This research has been done with the extensive cooperation of managers and employees of banks in Marvdasht city of Fars province in Iran and the authors thank and appreciate the cooperation of the managers and the employees of banks.

## CONFLICT OF INTERESTS

The authors declare that there is not any conflict of

interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancy has been completely observed by the authors.

#### ABBREVIATION

<i>AVE</i>	Average Variance Extracted
<i>BI</i>	Business Intelligence
<i>CV-Com</i>	Cross Validated Commuality
<i>CV-Red</i>	Cross Validated Redundancy
<i>EFQM</i>	The European Foundation for Quality Management
<i>GoF</i>	Goodness of Fit
<i>KS</i>	Knowledge Sharing

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#### HOW TO CITE THIS ARTICLE

Keshtegar, A.; Ghasemi, M.; Hosseini, A.; Ahang, F.; Ghaffari, H., (2021). The impact of business intelligence on enablers of EFQM excellence model with mediating role of knowledge sharing. *Int. J. Hum. Capital Urban Manage.*, 6(2): 173-184.

DOI: 10.22034/IJHCUM.2021.02.06

url: [http://www.ijhcum.net/article\\_239608.html](http://www.ijhcum.net/article_239608.html)

