



# Effect of Market Orientation and Technological Innovation on Business Performance: Moderating Role of Ethical Leadership

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Received 25 Apr 2023

Accepted 27 May 2023

Online Published 01 Nov 2023

## Abstract

**Introduction:** The purpose of the current study is analyzing the moderating role of ethical leadership in relation to the effect of market orientation and technological innovation on business performance of companies producing saffron in Iran.

**Material & Methods:** The current study is of descriptive-correlational type, in terms of nature, and it is at the level of applied-developmental studies, in terms of objectives. The statistical population of the study includes the managers and employees of 58 companies which are members of the union, out of which 232 individuals who had the ability to answer the questions were selected, and by referring to the Morgan Table, the sample size was determined to be 144 individuals. Considering the higher number of questionnaires distributed, 147 questionnaires were taken into consideration for analysis, and the hypotheses of the study were analyzed by employing the statistical test of partial least squares structural equation modeling.

**Results:** The findings of the study showed that the market orientation and technological innovation significantly affect the business performance. Moreover, the moderating role of ethical leadership in relation to the effect of market orientation on the business performance was proved; however, the moderating role of ethical leadership in relation to the effect of technological innovations on the business performance was not proved.

**Conclusion:** Considering the statistical results, the variables of market orientation and technological innovation, and also the moderating role of ethical leadership in market orientation positively affect the business performance of companies, but the moderating role of ethical leadership in relation to the effect of technological innovations on the business performance was not proved.

**Keywords:** Ethical leadership, Market orientation, Technological innovation, Business performance

**How to Cite:** Sadeghi M, Ghayour Baghbani SM. Effect of market orientation and technological innovation on business performance: moderating role of ethical leadership, Int J Ethics Soc. 2023;5(3):41-51. doi: [10.22034/ijethics.5.3.41](https://doi.org/10.22034/ijethics.5.3.41)

## INTRODUCTION

Today, market orientation has received a lot of attention as an organizational ability for understanding the customer's needs [1]. Accordingly, rapid changes in the business environments and globalization have led to accelerating the progress of new technologies in such a way that many entrepreneurs faced the question whether to update or substitute their strategy or not [2]. Therefore, studying

ethical leadership gained much importance due to the increasing concerns regarding the ethical issues in business area [3], in such a way that the instable and dynamic atmosphere of the businesses made the organizations to improve their organizational performance to confront such uncertainty [4]. Market orientation was introduced as an effective strategy for corporate survival in a competitive space, which might result in a stable competitive advantage

for the corporations [1]. In other words, since market orientation is regarded as the main principle for identifying market knowledge and serves as the guide of marketing act, it gained a lot of importance [5], and promoting the level of market orientation in order for promoting the performance of companies became the main issue in this regard [1]. In other words, market orientation was defined as a wide generation of organizations' information in regard to the customers' needs information dissemination and responding to them [6]. Accordingly, it might be explained as an organizational culture in the form of the behavior of corporate's staff for creating continuous values, which might result in the satisfaction of customers, the staff, company directors and high profitability [7]. Meanwhile, market orientation was also studied as a behavioral or cultural structure, according to which market orientation is a behavioral structure that emphasizes organizational information process activities such as developing, disseminating and responding to the market information, and from cultural viewpoint, its values and norms were analyzed, and it was reflected by the extensive adherence of the organization to the values and norms of customers and competitors, and the importance of creating double value for the customers was emphasized [1]. Given the mentioned definitions, market orientation was considered to include three behavioral components of customer orientation, competitor orientation and intersection coordination [8], among which the customer's insight is very important in order to create knowledge about the customers and to use it to be informed of the trade decisions of companies [6]. It might be stated that the companies which execute a high level of market orientation are able to understand their industrial trend and effectively respond to the customers' needs [1].

In early 1980s, the governments started their technological innovation policies [9] and stated that technological innovation patterns for products and processes are created as a result of different factors including the need for improving the company's performance [2], and that the extent to which the companies conceive it as a preferable option in alternate ideas depends on the loss or profit of the company while using or not using the technology [10].

Accordingly, to evaluate the level of innovation, two main components of product and process were analyzed which were called technological innovation. The innovation of product was defined as a product or service which is new or significantly improved in terms of characteristic or application, while innovation of technology was defined as a new trend of production or a new method of delivery [11]. Therefore, in conceptual terms, technological innovation was defined as any increasing or key visualized change in the technology of the product, process or changes in valuable activities such as services and management [3], and new technologies, new products and new processes were considered as the results of its efforts [12].

On the other hand, the environment of technological innovation was defined as a set of factors which might affect its status. Accordingly, the status of a technological innovation includes a set of features related to an interval time when the system is defined; for example, technological environment includes competitive markets and exclusive competition, which might direct the development of technology by interaction between the innovations for the purpose of achieving the global goals and competitive advantages [13]. The compatibility of such technologies depends on the dominant standards of previous experiences and the needs of the new consumers or users, in such a way that if it is compatible with the current performance of the company, it might lead to the development of the technological innovation of the company [2]. Finally, technological innovation is assessed from two aspects of input and output, based on which the input component assesses the investments in the area of research and development, while the output component is assessed by the number of patent licenses, patent applications and the income of selling new products [14]. As a result, technological innovation capability significantly helps the companies to reach the strategic competition which leads to the better sales performance and gaining competitive advantage [3].

In the current era, ethical leaders and their ethical behavior play a key role in guarantying the sustainable development of organizations by presenting an ethical environment and creating a strong collective culture [15]. Ethical leaders actively promote the ethical behavior among the staff, through bilateral relations

[16]. Their vital power and their ability in fair activities inspire the staff to show a similar behavior [15]. Accordingly, ethical leadership might be described as showing appropriate behavior through individual measures and interpersonal relationships and promoting such a behavior among the followers through bilateral relations, strengthening and decision making [17]. The concept implies two aspects of ethical personality and ethical manager. Ethical personality indicates the perception of followers of personality features and humanitarian motivation of the leader, shown by honesty, fairness and paying attention to others. Ethical management indicates the active efforts of the leader to influence the ethical and non-ethical behavior of followers, which is manifested by establishing relations, granting rewards, punishing, emphasizing ethical criteria and modeling the ethical behavior [18].

In line with this, among the duties of ethical leaders are communicating with key beneficiaries and establishing transparent relations in regard to the possible risks of company's products and services, in such a way that the ethical leader becomes able to guarantee the safety of customers. Given such duties, the ethical leaders are expected to be aware of their business area and evaluate the possible effects of their organization's decision on the society and natural environment, because the goal of ethical leadership is achieving mutual interests such as organizational legitimacy, which guarantees the sustainability of business [3]. As a result, ethical leaders are the main stimuli of organizational behavior whose ethical measures are observable in practice, and in this way, they influence the ethical behavior of staff. Accordingly, the scholars state that ethical leadership promote ethical values among the staff in such a way that good behaviors are prevailed and bad behaviors are restrained [19], which might lead to the organizational citizenship behavior, giving importance to the duties, organizational commitment, trusting the leader and being satisfied with the leader and, finally, excellent ethical performance [20].

Today, the companies' performance refers to the manner of achieving the organization's goals and creating and disseminating values to the customers by a desired method [21], in such a way that in different studies, the business performance has been assessed from two viewpoints of financial performance and

market-customer performance. The financial aspect includes return on asset, return on sales, return on investment and increase in profit [22], while the market-customer aspect is assessed in terms of market share, growth and sales [23]. In other words, business performance is defined as creating values and distributing them among customers, which spontaneously results in a performance by customer's participation [21]. Therefore, assessing the business performance has received a lot of attention because it presents some information about the company's goals and how to achieve them, which might be assessed by perceived criteria (initial resources) and objective criteria (secondary resources). The target criteria in business performance include three categories: A. financial performance which means the sales of new products, profit, contributed capital, return on equity and disposable personal income, B. Market performance which includes sales and market share, and C) Shareholders' return which includes total of shareholders' return and economic value added [24]. The most important studies conducted relevant to the field of the current study are summarized in the following:

In an article entitled, "Investigating the Effect of Market Orientation on the Organizational Performance by Considering the Mediating Role of Innovation and Organizational Learning", the researchers showed that market orientation affects directly and indirectly the organization's performance through the mediating variables of organizational learning and innovation [25]. Findings of another study entitled, "Investigating the Effect of Market Orientation on the Business Performance by Considering the Mediating Role of Organizational Learning and Innovative Capabilities" showed that market orientation positively and significantly affects the innovation capability and organizational learning, and innovation capability and learning capability also positively and significantly affect the business performance. Moreover, market orientation affects the business performance through the mediating variable of organizational learning and innovation capability [26]. In a study, entitled, "The Effect of Information Technological Innovation on the Company's Performance", the researchers showed that technological innovation influences the company's performance [2]. In research entitled, "Investigating

the Effect of Technological Innovations in the Field of B2B on the Company’s Performance: The Perspective of Ethical Leadership”, conducted among the IT service companies, it was concluded that ethical leadership affects the technological innovation, significantly and positively, and it also affects positively the company’s performance [3]. In a study, entitled, “The Effect of Market Orientation and Social Responsibility on the Company’s Performance Considering the Moderating Role of Relationship Marketing Orientation”, which was conducted on the owners and senior managers of Asian companies, it was indicated that all components have positive and significant relationships with each other while considering the moderating role of marketing orientation [27].

The purpose of this research is to analyze the moderating role of ethical leadership in relation to market orientation and technological innovation on business performance, and as it is stated in scientific literature that market orientation and technological innovation have an impact on business performance. However, there is little knowledge about the importance of ethical leadership on market orientation and technological innovation, and its effect on these two variables has not been considered, which is investigated in this research. Considering the mentioned issues, the conceptual model of the study has been presented in Figure 1.

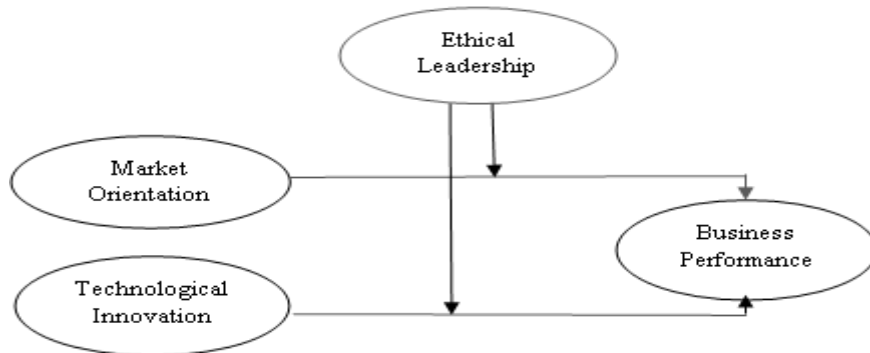


Figure 1. The Conceptual Model of the Research

**MATERIAL AND METHODS**

The current study is of descriptive-correlational type, in terms of nature, and it is at the level of applied-developmental studies, in terms of objectives. The statistical population of the study includes the managers and staff of 58 companies active in the field of saffron export, and it was estimated that in each company, four individuals are capable of answering the research questions; as a result, 232 individuals formed the statistical population of the study, and by referring to the Morgan Table, the sample size was determined to be 144 individuals. Due to distributing more questionnaires, 147 questionnaires were taken into consideration at the time of analysis. The

sampling technique is simple random technique. Library- and field-based methods were used for data collection. In the library-based method, Persian and English specialized books and magazines were used, and in the field-based part of the research, a standard questionnaire including such variables as ethical leadership, market orientation, technological innovation and business performance which were relying on the studies [20, 7, 2, 28] respectively, was used for data collection.

**RESULTS**

As seen in Table 1, the descriptive statistical results of the current study are as follows.

Table 1: Descriptive statistics

Features under study	Alternatives	Number	Percentage
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Age	Less than 25 years old	11	7.5
	25-30	27	18.4
	31-35	31	21.1
	36-40	28	19
	More than 46	50	34
Education	High school degree and less	72	49
	Undergraduate	58	39.5
	Graduate	16	10.9
	PhD	1	0.7
Job records	1-5	60	40.8
	6-10	50	34
	11-15	14	9.5
	16-20	10	6.8
	21-25	8	5.4
	26-30	1	0.7
	31 and more	4	2.7
Gender	Female	83	56.5
	Male	64	43.5

In the inferential part, in order to analyze the data, the method of structural equation modeling

(SEM) with partial least squares approach (PLS) has been used.

### Validity and Reliability of the Questionnaire

In order to evaluate the divergent validity, the method of Fornell and Larcker (1981) was employed. Based on this method, the square root of average variance extracted (AVE) values is compared by the correlation of constructs. If the

square root of AVE for each construct is more than the correlation of one construct with other constructs, the divergent validity of constructs is proved [29]. To evaluate the diagnostic validity, the output of PLS3 Software was used. Such values are shown in Table 2. The result is that all variables under study have diagnostic validity.

**Table 2:** Divergent Validity (Diagnostic)

	Business performance	Ethical leadership	Market orientation	Technological innovation
Business performance	0.847			
Ethical leadership	0.422	0.713		
Market orientation	0.529	0.643	0.707	
Technological innovation	0.485	0.308	0.559	0.709

Based on the findings of Table 3, the factor loading for the research variables are all more than 0.5, and the criterion value for the adequacy of the coefficients of factor loadings is 0.5; therefore, the reflective measurement model is a homogenous model. In order to evaluate the convergent validity, the AVE was used. In Table 3, the AVE of constructs is presented. Based on

the obtained results, since all values of AVE are more than 0.5, they have the criterion of adequacy and have good convergent validity.

To evaluate the reliability, there are the criteria of Cronbach's Alpha and composite reliability for the reflective measurement model. The values of Cronbach's Alpha are presented in Table 3 for each variable, which is more than 0.7, indicating

the acceptable reliability of the research tool. The value of Cronbach's Alpha for all the items of questionnaire has been reported 0.918. The coefficient of composite reliability is also used to evaluate the internal reliability of constructs. The

value of this coefficient should be more than 0.7 [30]. The values of the coefficient of composite reliability are shown in Table 3. All the values are more than 0.7, so the composite reliability is proved.

**Table 3:** Factor Loading, Convergent Validity, Cronbach's Alpha and Composite Reliability

Variable	Item	Factor loading	Convergent validity (AVE)	Cronbach's Alpha	Composite Reliability (CR)
Ethical Leadership	Q <sub>1</sub>	0.526	0.509	0.868	0.897
	Q <sub>2</sub>	0.582			
	Q <sub>3</sub>	0.782			
	Q <sub>4</sub>	0.729			
	Q <sub>5</sub>	0.767			
	Q <sub>6</sub>	0.757			
	Q <sub>7</sub>	0.751			
	Q <sub>8</sub>	0.65			
	Q <sub>9</sub>	0.823			
Market Orientation	Q <sub>10</sub>	0.564	0.501	0.859	0.887
	Q <sub>11</sub>	0.651			
	Q <sub>12</sub>	0.523			
	Q <sub>13</sub>	0.754			
	Q <sub>14</sub>	0.768			
	Q <sub>15</sub>	0.619			
	Q <sub>16</sub>	0.787			
	Q <sub>17</sub>	0.612			
	Q <sub>18</sub>	0.855			
	Q <sub>19</sub>	0.84			
	Q <sub>20</sub>	0.726			
Technological innovation	Q <sub>21</sub>	0.713	0.503	0.759	0.822
	Q <sub>22</sub>	0.784			
	Q <sub>23</sub>	0.65			
	Q <sub>24</sub>	0.758			
	Q <sub>25</sub>	0.713			
	Q <sub>26</sub>	0.625			
Business performance	Q <sub>27</sub>	0.839	0.717	0.9	0.927
	Q <sub>28</sub>	0.762			
	Q <sub>29</sub>	0.914			
	Q <sub>30</sub>	0.905			
	Q <sub>31</sub>	0.804			

In the structural model, the indexes of coefficient of determination ( $R^2$ ), the commonality index (Q2) and the t significance coefficient were calculated, the values of which are presented in Table 4. The indexes of  $R^2$  and Q2 are measured to determine the quality of the model. The index of  $R^2$  shows that what percentage of dependent

variable's changes is due to the changes of independent variable. This index is related to the endogenous latent (dependent) variables of the model, and it is not calculated for the exogenous variable. Three values of 0.19, 0.33 and 0.67 are considered as the criterion values for weak, moderate and strong values [31]. Another index

of measurement model quality is calculated by CV Com. If this index shows a positive number, the reflective measurement model enjoys the necessary quality. The values of CV Com are

presented in Table 4. Since all the values are positive, the quality of the structural model is good.

**Table 4:** Fitness Indexes of the Model

Aspects	Q2	R <sup>2</sup>
Business performance	0.45	0.378
Ethical leadership	0.314	-
Market orientation	0.26	-
Technological innovation	0.217	-
Mean	0.31	0.378

The first hypothesis: Market orientation affects the business performance positively and significantly. According to the results of data analysis, the value of t-statistics is 1.997, and since this value is more than 1.96, it might be said that market orientation affects significantly the business performance, at the confidence level of 95 percent. So the first hypothesis of the study is proved.

The second hypothesis: Technological innovation affects the business performance positively and significantly. According to the results of data analysis, the value of t-statistics is 3.759, and since this value is more than 1.96, it might be said that technological innovation

affects significantly the business performance, at the confidence level of 95 percent. So the second hypothesis of the study is proved.

The third hypothesis: Ethical leadership moderates the effect of market orientation on the business performance. According to the results of data analysis, the value of t-statistics is 2.051, and since this value is more than 1.96, it might be said that the effect of the variable of market orientation on the business performance, with the moderating role of ethical leadership, has been significance, at the confidence level of 95 percent. So the third hypothesis of the study is proved.

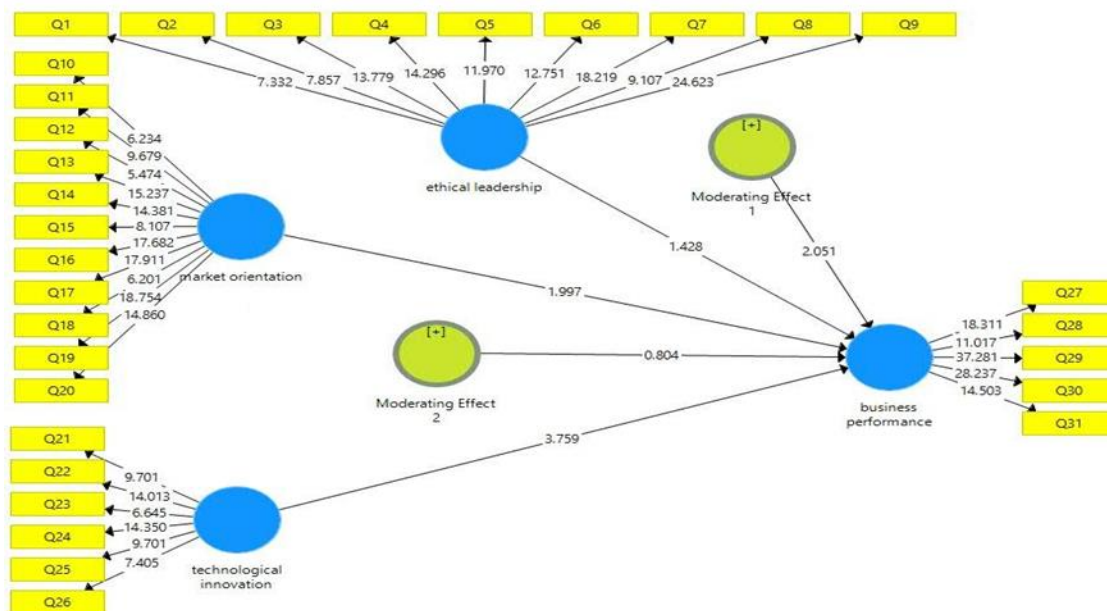


Figure 2. Significance of Path Coefficient (t-statistics)

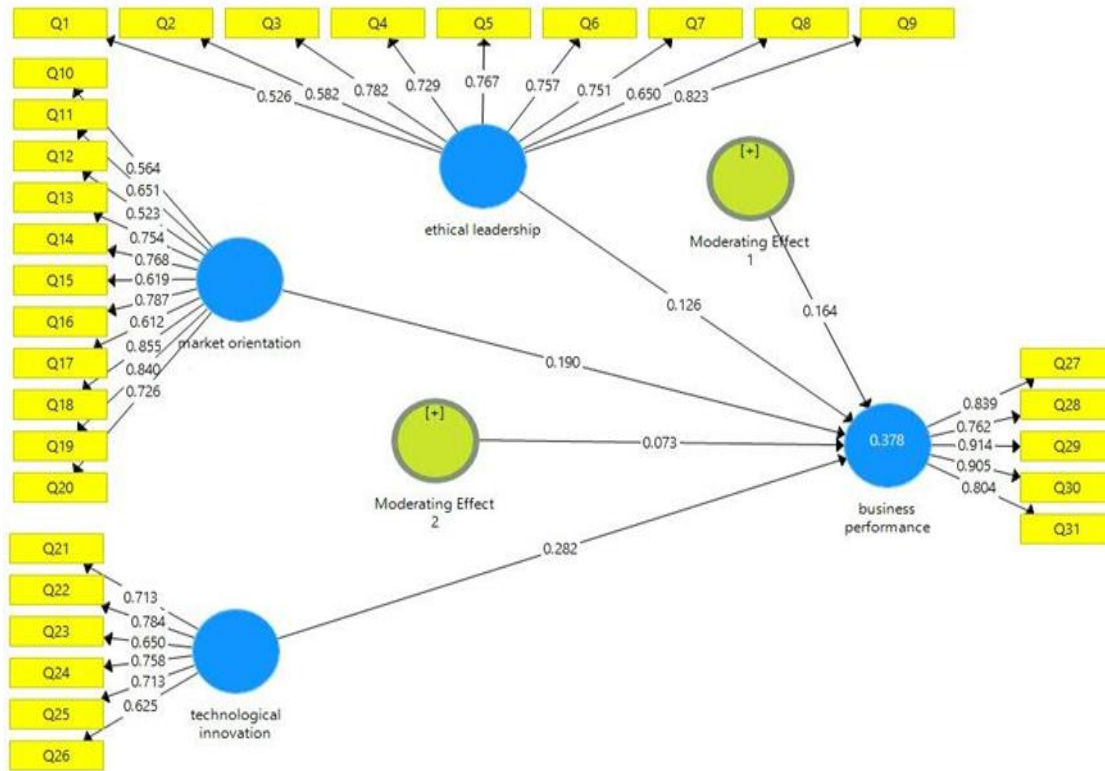


Figure 3. Structural Path Coefficients

The fourth hypothesis: Ethical leadership moderates the effect of technological innovation on the business performance. According to the results of data analysis, the value of t-statistics is 0.804, and since this value is less than 1.96, it might be said that the effect of the variable of

technological innovation on the business performance, with the moderating role of ethical leadership, is not significant, at the confidence level of 95 percent. So the third hypothesis of the study is rejected.

Table 5: Summary of the Results of Hypotheses

Hypothesis	Hypotheses	t-statistics	Path coefficient	Confidence level	Result
1	Market orientation_ Business Performance	1.997	0.19	95%	Proved
2	Technological Innovation _ Business Performance	3.759	0.282	95%	Proved
3	Market orientation _ Business Performance (ethical leadership as a moderator)	2.051	0.164	95%	Proved
4	Technological Innovation _ Business Performance (ethical leadership as a moderator)	0.804	0.073	95%	Rejected

## DISCUSSION

Considering that the effect of market orientation on the business performance has been proved, if the

measures of the companies are analyzed based on the needs of the customers, in such a way that the activities of the company are improved in line with supplying

the needs of the customers, and the staff are coordinated for delivering services to the customers, the annual sales of companies and the customers' satisfaction shall increase. Moreover, the findings of the current study are in line with the findings of other studies [25, 26].

Considering that the effect of technological innovation on business performance has been proved, the companies that introduce new products or a new composition of their products to the market or improve their products, and use new machinery and new methods in the process of their business lead to the increase in market share and finally increase in the company's profitability. The findings of the present study are consistent with the findings of the study [2]. Considering that the effect of market orientation on business performance, with the moderating role of ethical leadership, has been proved, it might be stated that companies that their leaders pay attention to the comments of the staff, encourage ethical standards, take measures by ethical methods while considering the interests of the staff, and make fair decisions, define success, not only by the results, but also by the method of achieving it, and they have the ability to identify the weak and strong points of the competitors more than other companies. Such companies use standard operational methods to deliver better services to the customers and improve the capabilities of their staff, and in such ways, they increase the growth rate of annual sale, the number of customers and finally the profitability. The results of the current study are in line with the results of the study [27].

Considering that the effect of technological innovation on business performance, with the moderating role of ethical leadership, has not been proved, the organizations that exchange views regarding ethics in their subset, and get sure that their decisions are moral, and use information and communication technology for developing the new markets and use online sale programs in their business, do not lead to the increase in the rate of company's annual sales. Such results are not in line with the findings of other researchers in the study [31].

Every research has limitations and obstacles, each of these limitations has an impact on the process of doing the work. This research has the following limitations:

- Due to the coronavirus pandemic, having access to the staff of companies was difficult since they had presents difficulties.
- Low number of specialized and educated staff made the distribution and filling in the questionnaires by the staff difficult.

According to the research results, the following suggestions can be made:

The leaders of saffron companies are recommended to use new and innovative methods in their processes to both decrease the production costs and take benefit of the advantages of innovation in the technology.

The companies producing saffron are recommended to use online methods of sale to increase advertisements and sales of their products, so that the customers become able to purchase the product by having enough information and easier access.

## CONCLUSION

It has been years that the saffron producing companies have formed a significant part of business in Iran. Since saffron, as an important product, has played a key role in Iran's exports, it is necessary to have a special look at the saffron business. Results of the current study, which has been conducted among the companies exporting saffron in Iran, showed that market orientation and technological innovation affect the business performance, significantly and positively. The effect of market orientation on the business performance with the moderating role of ethical leadership was proved, but the effect of technological innovation on the business performance with the moderating role of ethical leadership was not proved.

## ETHICAL CONSIDERATIONS

In order to observe ethical principles and for the confidentiality of information, it was avoided to name the companies, and by introducing the references, the scientific, ethical and trusteeship principles were observed.

## CONFLICT OF INTEREST

The authors of the current study acknowledge that there is no conflict of interest.

## ACKNOWLEDGEMENT

We express our gratitude to the Saffron Union of Mashhad and the companies exporting saffron that helped the authors to collect data of the current study.

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