

The Impact of Commitment to Apply the Standards of the European Model of Excellence in Functional Performance: A Case Study of the Sudanese Electricity Distribution Company

IBRAHIM AHMED ELAMIN ELTAHIR, BADRELDIN MOHAMED AHMED ABDULRAHMAN*,
HAMZA ABDALLAH ABDALRHMAN YAHYA, TARIG OSMAN ABDALLAH HELAL,
ABDERHIM ELSHAZALI YAHIA ABDALLAH, BABIKER ELYASA ELKHALIFA,
SAEED HASSAN ELAAGEB HASAB ELKARIM, OSAMA MOHAMED AHMED ENAD
Department of Business Administration,
Jouf University,
KINGDOM OF SAUDI ARABIA

*Corresponding Author (<https://orcid.org/0000-0003-2174-1150>)

Abstract: - This study aimed to find out the effect of applying the standards of the European model of excellence on the functional performance of the Sudanese Electricity Distribution Company Limited (SEDCL) in Sudan. And come up with results that show the reality of the ability of the Sudanese company to apply this model, the best standards for applying it, and the standards where there is weakness in applying them. 200 questionnaires were distributed to the respondents, of which only 172 were valid for analysis. They were retrieved at a retrieval rate of 86%, which is a high response rate that exceeds the acceptable limit of 75%. There is a weak effect of adherence to the application of the standard (leadership, strategy, partnerships, resources, personnel, and operations) on the functional performance of the Sudanese Electricity Distribution Company Limited. The study concluded that the Sudanese company is committed to apply the standards of the European model, and the commitment to apply the standards (customer results, employee results, community results, key performance) affects the functional performance of the Sudanese Electricity Distribution Company Limited. The best model to use (operations, community results, employee results, key results, partnerships, and resources) in terms of their impact on the Functional performance of the Sudanese Electricity Distribution Company Limited. The study recommends that Sudanese Electricity Distribution Company Limited review the application of some elements of the European model that have a weak impact on Functional performance (such as leadership, strategy, employees, and customer results) to achieve the greatest benefit from applying this model.

Key-Words: - European Model of Excellence, Sudanese Electricity Distribution Co. Ltd, Functional performance.

Received: July 17, 2022. Revised: May 29, 2023. Accepted: June 28, 2023. Published: July 24, 2023.

1 Introduction

For companies to continue in the business environment, they should adhere to excellence, [1], This requires companies to adapt models that enable them to effectively understand and manage the needs and expectations of stakeholders through innovation and continuous improvement, [2], [3], [4]. In, [5], the authors stated that the stakeholder approach to business is to create the greatest possible value for stakeholders without resorting to trade-offs. One of these models that institutions can rely on is the European model of excellence, [6], which is designed to help organizations become more competitive, [7]. Normally, organizations

operating in the business environment face many risks and seek to reduce them by taking advantage of their potential and using a special approach and tools that help to accurately assess the risks to achieve excellence, [8].

Many studies have discussed the European model of excellence. One of these studies, [9], focused on the main benefits that can be obtained by construction and engineering when they adopt this model. The study was conducted on a sample of 100 engineering and construction companies to conclude them about the application of the European model of excellence, [10]. It concluded that excellence depends on balancing and meeting the needs of all relevant stakeholders (including users, customers,

suppliers, and the community at large, as well as financial stakeholders).

A study in, [11], designed institutional excellence models as a framework for evaluating institutions to qualify for awards and to recognize institutions that achieve high levels of performance. It offers a self-assessment software tool designed on the model of excellence, considering the level and effects of "visible" and "invisible" between the critical and non-critical factors of the model. It analyzed the criteria according to influences that have the highest rate in both empowerment and outcome levels, [12]. Conducted a comparison between the Malcolm model, the Australian model of excellence, and the European model of excellence. To accomplish the comparison, Toma et al. obtained information from multiple secondary sources. They concluded that business excellence models provide a comprehensive approach to the continuous improvement of any type of organization. Thus, the standards used in the models under comparison emphasize that adherence to them achieves business excellence and provides key elements that form the basis of a successful organization. In a study done by, [13], the authors stated that they presented the empirical results of studies that were conducted on 68 Spanish special teams engaged in the process of implementing the European Quality Foundation's Quality Management Excellence Model. The objective of Gomez et al. is to explore the main obstacles to apply total quality management in Spanish business. The results show that the most important obstacles related to the implementation of the European model are a lack of time and a lack of material and financial resources. The structure of barriers in these groups consists of three groups: behavioral and cultural barriers, organizational barriers, and resource barriers. Author, [14], conducted a study that focused on exploring the management approaches used in 50 expatriate-run SMEs that are evaluated and classified according to the eight concepts of excellence on which the European Foundation for Excellence in Quality Management model is based, to determine the focus and extent of current management practices with the current policy of the UAE government to issue commercial licenses that effectively enhance entrepreneurial opportunities for citizens of the emirate. The research has found a wide variation in management methods. The work has highlighted what has, in many cases, been seen as a conflict between business planning and mentoring within SMEs in the UAE. Another study, [15], explored the impact of business excellence and its values on business in

Croatian business practice. 106 large Croatian companies employing more than 250 employees were studied, and the relationship between the values of work excellence and company performance is explored. The study tested the hypothesis that there is a positive and empirically verifiable relationship between the application of the concept of business excellence and the commercial performance of large Croatian companies. The results show a positive relationship between the application of the principles of business excellence and the company's successful performance in practice, [16], [17]. The implementation of the EFQM model improves corporate vision, improves internal efficiency, and improves decision-making. Attention to the potential of innovation and investment in human capital and their training in the short term maximizes results for parties to interests in the long term. In, [18], the authors stated that the study conducted on 74 organizations in five Asian countries to identify the effectiveness of work excellence for institutions that adopt the European model indicates that the application of the European model needs to develop a culture of work excellence, and this result is consistent with the outcome of the current study that the researcher reached that the company, The Sudanese Electricity Distribution Company, adopted the distinction model at work, lacking the ability to develop a culture of excellence at work.

The main objective of this paper is to identify the impact of the commitment to apply the standards of the European Model of Excellence in Functional the study reviewed the intellectual aspects of management literature regarding the conceptual framework of the European model of excellence. then, we have identified the main determinants and drivers behind the growing interest in applying the European model of excellence. The study conducted a field study to measure and determine the impact of the commitment to apply the European model of excellence in functioning and noted that most Sudanese companies generally do not adopt the model of excellence in their work.

The Sudanese Electricity Distribution Company is a Sudanese company that adopts a model of excellence in its work. The question that needs to be answered in this study is how it is committed to apply the standards of the European model of excellence and whether this has an impact on its functioning. The importance of the study is reflected in the scarcity of scientific research and studies on the topic of the European model of excellence in Sudan. In addition to the Sudan Electricity Distribution Company's interest in the quality of the

work process to maximize the stakeholders' findings, this study reflects the reality of its application of European model standards, whether possible or produced.

The addition of this study to the administrative literature comes to clarify the reality of the application of the discrimination model by companies in the environment of poor countries that strive to apply it and the extent of their understanding of the factors of this model. Interest in applying the European model.

It also comes from a practical application point of view, in that its results benefit the Sudanese Electricity Distribution Company Ltd. in reconsidering its application of this model and Sudanese companies in applying this model more effectively to maximize the results achieved from its application.

2 Literature Review

European model of excellence: The European Foundation Excellence Model was introduced at the beginning of 1992 as a framework for evaluating the applications of the participants of the European Prize, [19]. The European model of excellence is a guideline containing several standards and possible adherence to them, leading to excellence in work, [20], [21]. Implementation of the model requires a corporate culture, as a few studies have demonstrated a strong relationship between corporate culture and success in implementing the model, [22]. In, [23], the authors stated that the model includes nine main criteria classified into two main groups:

Enablers: These are the factors that the organization seeks to apply to maximize the results achieved for the parties and achieve excellence in work (strategy, leadership, staff, operations, resources, and partnerships, [24]).

- Leadership: In, [25], the authors stated that Leadership is responsible for setting the ambitious policies and objectives of the organization and implementing strategies to achieve those policies and objectives. They also stated that the leadership must maintain the appropriate internal atmosphere in the organization, encourage employees, inspire a spirit of enthusiasm, and appreciate their positive efforts. This standard expresses a set of qualities that emerge from a person who directs and from people who accept this guidance in pursuit of common goals. It is the driving force behind strategy," people," and "partnerships and resources", [26].

- People: The human element is one of the most important resources in the establishment, and its interaction process leads to the success of other resources. Satisfaction must be achieved through activating internal marketing policies to achieve the competitive advantage of the organization. This standard reflects the increase in employees' contributions through their development and production at work, [27].

- Strategy: This standard expresses all the theses, methods, and ideas adopted by the company to achieve excellence in its work, [28].

- Partnerships and resources: Excellence in this standard is achieved through establishing and maintaining partnerships with mutual stakeholders, [29].

- Processes: This standard reflects the functions performed by the company to convert its inputs into outputs. stated that excellence is achieved by understanding all interconnected activities and managing them systematically, ensuring stakeholder perceptions, [30].

Results: These are distinct outputs that the organization seeks to achieve in the following areas: (employees, customers, community, key results) through the good exercise of its potential to meet or exceed the needs and expectations of the beneficiaries, [31].

- People Results: This criterion reflects the extent to which the results satisfy the owners, employees, and suppliers, [32].

- Customers Results: As Desponded, in, [33], the authors stated that the company needs to take care of and keep existing and potential customers to increase its market share. Achieving excellence will be by achieving their satisfaction through what the company offers, [34].

- Society Results: Excellence is the organization's understanding of the requirements of the community and meeting them, [35].

- Business Results: This standard reflects the efficiency of an organization's performance by measuring the quality of a product or service, [36].

Functional performance: consists of productive performance, marketing performance, employee performance, financial performance, and environmental performance, [37].

3 Model and Methodology

To achieve the study's objective, we followed a descriptive analysis approach, because it was found to be more appropriate for the data obtained. The

study community consists of employees of the Sudanese Electricity Distribution Company Limited, and a sample of 200 employees from the study community who are the group responsible for quality in the company, called the intentional sample, which is one of the probable samples chosen by the researcher from the study community in such a way as to provide equal opportunities in the choice of all the subjects of the study society where the distribution was made (200). The number of (172) forms valid for analysis has been retrieved at a retrieval rate of 86%. The response rate is considered high as it exceeds the accepted limit of 75%. The relative rise in responses may be attributable to continuous follow-up by researchers.

To test the authenticity of the study data collection tool, the Alfa Cronbach coefficient was used to measure the consistency of the determination as to whether any of the phrases of the clarification have been deleted. The constant coefficient for each axis was in the range (0.927–0.970), which is lower or equal to the value of the alpha-Cronbach coefficient for all axes of the study (0.975), indicating good stability of the phrases of resolution's self-honesty coefficient (0.987). It turns out that most stabilization factors for all dimensions and grades on the questionnaire axis scale are greater than 0.60, except for the third hypothesis, which confirms the suitability of this metric in its final form to measure the questionnaire axes in the current research community.

The model has been specified as shown in (Figure1) below:

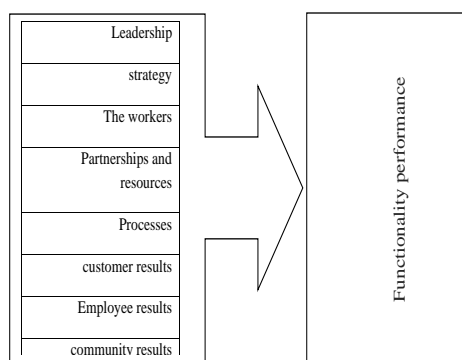


Fig. 1: Research Variables

Source: Authors based on, [35], [36], [37], [38].

Study hypotheses:

The study examined the following hypotheses:

- The commitment to apply the leadership standard affects the functional performance of the Sudanese Electricity Distribution Company Limited.

- The commitment to apply the strategy criterion affects the functional performance of the Sudanese Electricity Distribution Company Limited.
- The commitment to apply the standard to workers affects the functional performance of the Sudanese Electricity Distribution Company Limited.
- The commitment to apply the standards of partnerships and resources affects the functional performance of the Sudanese Electricity Distribution Company Limited.
- Commitment to apply the operations standard affects the functional performance of the Sudanese Electricity Distribution Company Limited.
- The commitment to apply the customer results standard affects the functional performance of the Sudanese Electricity Distribution Company Limited.
- The commitment to apply the employee results standard affects the functional performance of the Sudanese Electricity Distribution Company Limited.
- The commitment to apply the community standard affects the functional performance of the Sudanese Electricity Distribution Company Limited.
- The commitment to apply the main performance standard affects the functional performance of the Sudanese Electricity Distribution Company Limited.

4 Field study

In this part, the actual application of (SEDCL) standards for the European model of excellence was determined by answering the questionnaire questions by the respondents, for which the average, standard deviation, and the (T) test were calculated for the statements of the questionnaire axes combined as follows (Table 1):

4.1 Questionnaire Dimension Analysis

Table 1. Arithmetic Mean, Standard deviation, and T. Test

Dimension Statements	Arithmetic Mean	Standard Deviation	T. TEST
Leadership	3.9486	.88124	58.765
Strategy	3.7500	.78928	62.311
The workers	3.6802	.88750	54.384
Partnerships and resources	3.7820	.73202	67.758
Processes	3.6802	.83351	57.906
customer results	3.6919	.83809	57.772
Employee results	3.5895	1.1229	41.947
community results	3.5698	.91996	50.890
Main findings	3.7628	.87138	56.632
Functionality	3.6752	.75901	63.504

It is clear from the above table that the average for all phrases is greater than (3), which is the hypothetical medium referred to in the study, indicating that the responses of sample individuals are in the positive direction. The difference between the larger and smaller standard deviations (1.1229–.73202) is less than the correct one, indicating that the responses of sample members are homogeneous and in the positive direction.

4.2 Results Discussion

The standard of leadership in the functional performance of the Sudanese company to distribute electricity (Table 2)

Table 2. Standard of Leadership

	Regression Coefficients	T-test	Sig
B_0	1.303	6.805	.000
B_1	.601	12.690	.000
(R)	.697	R^2	.486

The results of the assessment showed that there is a direct correlation between the application of the leadership standard and functional performance, as the value of the simple correlation coefficient was (.697**) and the value of the determination coefficient was (.486**). This value indicates that the leadership standard is one of the capabilities of the European model of excellence. It contributes 48.6% to the functional performance of the Sudanese Electricity Distribution Company Ltd., which is a contribution less than the mean, and the effect on the dependent variable may be attributed to other factors in the model. And that the average leadership criterion value is 1.303. In view of the coefficient of the impact of the leadership criterion

on functional performance, it has reached 0.601, and it affects in a significant and positive way. From the foregoing, we conclude that the first hypothesis has been fulfilled.

Influences on the implementation of the strategic standards for the functioning of the Swedish company for the distribution of electricity (Table 3).

Table 3. Implementation of Strategic Standards

	Regression Coefficients	T-test	Sig
B_0	1.033	5.372	.000
B_1	.704	14.032	.000
(R)	.733	R^2	.534

The results of the estimation showed that there is a direct correlation between the application of the strategic criterion and functional performance, where the value of the simple correlation coefficient was (.733**) and the value of the determination coefficient was (.534**). This value indicates that the strategy criterion is one of the enablers of the European model of excellence. It contributes 53.4% to the functional performance of the Sudanese Electricity Distribution Company Ltd., which is a contribution slightly above the average, as the effect is attributed to the variable dependent on the rest of the other factors. And that the average value of the strategy criterion is 1.033. In view of the coefficient of impact of the strategy criterion on functional performance, it has reached 0.704 and affects it in a significant and positive way. From the foregoing, we conclude that the second hypothesis has been achieved.

The commitment to apply the standard of workers affects the functional performance of the Sudanese Electricity Distribution Company Limited.

Table 4. Standard of Workers

	Regression Coefficients	T-test	Sig
B_0	1.279	7.945	.000
B_1	.651	15.317	.000
(R)	.761	R^2	.580

The results of the estimation showed in Table 4 that there is a direct correlation between applying the standard to workers and functional performance, where the value of the simple correlation coefficient was (.761**) and the value of the coefficient of determination was (**.580). This value indicates that the standard of workers is one of the enablers of the European model of excellence. Contributes 58% to the functional performance of the Sudanese

Electricity Distribution Company Ltd. The average value of the worker's standard is 1.279, and since the coefficient of the impact of the worker's standard on functional performance has reached (0.651) and affects in a significant and positive way, from the foregoing we conclude that the third hypothesis has been achieved.

The commitment to apply the standard of partnerships and resources affects the functional performance of the Sudanese Electricity Distribution Company Ltd (Table 5).

Table 5. Standard of Partnerships

	Regression Coefficients	T-test	Sig
B_0	.568	3.040	.000
B_1	.822	16.931	.000
(R)	.792	R^2	.628

The results of the estimation showed that there is a direct correlation between applying the standard of partnerships and resources and functional performance, where the value of the simple correlation coefficient was (.729**), and the value of the coefficient of determination was (**.628). This value indicates that the standard of partnerships and resources contributes by 62.8%. The functional performance of the Sudanese Electricity Distribution Company Ltd. is considered a good contribution, while the effect is attributed to the rest of the other factors in the model. And that the average value of the partnerships and resources criterion is .568. In view of the coefficient of the impact of the partnerships and resources criterion on functional performance, it has reached (0.822), and it affects in a significant and positive way. From the foregoing, we conclude that the fourth hypothesis has been fulfilled.

The obligation to apply the operations standard affects the functional performance of the Sudanese Electricity Distribution Company Limited (Table 6).

Table 6. Operations Standard

	Regression Coefficients	T-test	Sig
B_0	.737	5.816	.000
B_1	.798	23.754	.000
(R)	.877a	R^2	.768

The results of the estimation showed that there is a direct correlation between the application of the operations criterion and functional performance, where the value of the simple correlation coefficient was (.877**) and the value of the determination

coefficient was (.768**). This value indicates that the operations criterion is one of the enablers of the European model of excellence. It contributes 76.8% to the functional performance of the Sudanese Electricity Distribution Company Ltd., which is a high percentage compared to all the rest of the model criteria. And that the average of the operations standard has a value of .737, and because the coefficient of the effect of the operations standard on functional performance has reached 0.798 and affects in a significant and positive way, from the foregoing we conclude that the fifth hypothesis has been achieved.

The commitment to apply the customer results standard affects the functional performance of the Sudanese Electricity Distribution Company Limited (Table 7).

Table 7. Customer Standard

	Regression Coefficients	T-test	Sig
B_0	1.101	6.562	.000
B_1	.697	15.729	.000
(R)	.770	R^2	.593

The results of the estimation showed that there is a direct correlation between the application of the customer results in standard and functional performance, as the value of the simple correlation coefficient was (.770**) and the value of the determination coefficient was (.593**). This value indicates that the customer results standard is one of the results indicators. The European model of excellence contributes 59.3% to the functional performance of the Sudanese Electricity Distribution Company Ltd. And the average value of the customer results in standard is 1.101. In view of the coefficient of the effect of the customer results standard on functional performance, it has reached (0.697), and it affects in a significant and positive way. From the foregoing, we conclude that the sixth hypothesis has been achieved.

The commitment to apply the standard of employee results affects the functional performance of the Sudanese Electricity Distribution Company Ltd (Table 8).

Table 8. Standard of Employee

	Regression Coefficients	T-test	Sig
B_0	2.125	14.159	.000
B_1	.432	10.816	.000
(R)	.638	R^2	.408

The results of the assessment showed that there is a direct correlation between the application of the employee results standard and functional performance, where the value of the simple correlation coefficient was (.638**), and the value of the determination coefficient was (.408*). This value indicates that the employee results standard as one of the indicators of the results of the model European Excellence contributes by 40.8% to the functional performance of the Sudanese Electricity Distribution Company Ltd., which is a lesser contribution than the mean in the dependent variable, while the effect is attributed by a greater percentage to other factors in the model. And that the average of the employee results in standard is 2.125, and in view of the coefficient of the impact of the standard of operations results on functional performance has reached (0.432) and affects in a significant and positive way, from the foregoing we conclude that the seventh hypothesis has been achieved.

The commitment to apply the community results in standards affects the functional performance of the Sudanese Electricity Distribution Company Ltd (Table 9).

Table 9. Community Standards

	Regression Coefficients	T-test	Sig
B_0	1.191	9.506	.000
B_1	.696	20.463	.000
(R)	.843	R^2	.711

The results of the assessment showed that there is a direct correlation between the application of the community results in standard and functional performance, as the value of the simple correlation coefficient was (.843**) and the value of the determination coefficient was (.711**). This value indicates that the community results standard is one of the indicators of the results. The European model of excellence contributes 71.1% to the functional performance of the Sudanese Electricity Distribution Company Ltd. And that the average value of the community results standard is 1.191 and given the coefficient of the impact of the community results standard on functional performance has reached (0.696) and affects in a significant and direct way, from the foregoing we conclude that the eighth hypothesis has been achieved.

The commitment to apply the main performance standard affects the functional performance of the Sudanese Electricity Distribution Company Ltd (Table 10).

Table 10. Main Performance Standard

	Regression Coefficients	T-test	Sig
B_0	.872	6.523	.000
B_1	.745	21.525	.000
(R)	.855a	R^2	.732

The estimation results showed that there is a direct correlation between the application of the main results of the criterion and function performance, as the value of the simple correlation coefficient was (.855**) and the value of the determination coefficient was (.732*). This value indicates that the main result criterion is one of the result indicators. The European model of excellence contributes 73.2% to the functional performance of the Sudanese Electricity Distribution Company Ltd., which is a good indicator of the reality of applying this standard compared to the other standards in the model that have been discussed. And that the average of the workers' standardized results is valued at.872. In view of the coefficient of the impact of the main results standard on functional performance, it has reached 0.745, and it affects in a significant and positive way. From the foregoing, we conclude that the ninth hypothesis has been fulfilled (Table 11).

Table 11. Functional Performance

Models	Correlation Coefficient	Modified Correlation Coefficient	Durbin Watson Value
Operations and Functionality Performance	.877a	.767	-
(Processes and community outcomes) and Functionality performance	.919b	.843	-
(Operations, community results, and employee results) and Functionality performance	.929c	.861	-
(Operations, community results, employee results, and main results) and Functionality performance	.933d	.868	-
(Operations, community results, employee results, key results, partnerships, and resources) and Functionality performance	.936e	.873	1.910

Gradual regression was used by entering and removing the variables automatically to obtain the best gradual regression model based on the value of the correlation coefficient and the adjusted correlation coefficient obtained when the independent variables (operations, community outcomes, employee outcomes, main results, partnerships, and resources) were introduced as explanatory variables and Functional performance as a dependent variable. Thus, we find that the criteria of the European model of excellence in the Sudanese Electricity Distribution Company Ltd. give the best results when introducing the variables (operations, community results, employee results, main results, partnerships, and resources) where non-influencing variables were excluded within the progressive model (leadership, strategy, employees). customer results). Although the measurement of each of these criteria individually had an effect and the hypotheses were validated, from a scientific point of view, excluding these criteria from the gradual decline due to their inability to affect the functional performance of the company is an indication of the weak application of the European model, as it became clear that the company's leadership is not ambitious. And it does not have an insightful vision that raises the contribution of applying this criterion by adopting fixed goals that can contribute a high contribution with the rest of the other criteria elements, as well as the weakness of the contribution of the strategy criterion after measuring the gradual regression, which shows the presence of inaccuracy in determining the vision of the future to be achieved, also the lack of influence. The contribution of the workers' criterion after measuring the gradual regression, which means that the workers' contribution through their development and production at work is weak, are points that show that the application of the European Excellence Model in it was not applied in an ideal way in three of the possibilities and a criterion of results that relates to the results of customers that reflect their satisfaction with the company. Therefore, it is expected that if this study is applied to other companies in Sudan, it may give similar results, due to the weakness of the capabilities in Sudan, as a poor country suffering from war. These results may differ if applied to companies in other countries whose environment may differ from that of Sudanese companies.

5 Findings and Recommendations

1. There is an effect of commitment to apply the possible standards of the European model on the

functional performance of the Sudanese Electricity Distribution Company Limited.

2. Commitment to apply the results criteria of the model (customer results, employee results, community results, key performance) affects the functional performance of the Sudanese Electricity Distribution Company Limited.

3. The best model to be used (operations, community results, employee results, key results, partnerships, and resources) and functional performance.

4. Some elements of the European model (strategic leadership, employees, and customer results) affect the functional performance of the Sudanese Electricity Distribution Company Limited.

The study recommends that the Sudanese Electricity Distribution Company Ltd. review the application of some elements of the European model, such as (leadership, strategy, employees, and customer results) to achieve the greatest benefit from the application of this model.

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Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

The authors equally contributed to the present research, at all stages from the formulation of the problem to the final findings and solution.

Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

No funding was received for conducting this study.

Conflict of Interest

The authors have no conflicts of interest to declare that are relevant to the content of this article.

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