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Motivation for Implementing TQM Programs through the EFQM Excellence Model: A Case Study of FarsNov Cement Company (Public Joint Stock)

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Abstract:

Considering the implementation of Total Quality Management (TQM) through the EFQM Excellence Model in Spain and learning from the obtained results, it was decided to apply this approach in Farsnov Cement Company as well. The purpose of this study is to analyze the motivations that drive different departments of the company to implement TQM through EFQM. Initially, the provided resources were reviewed, followed by the methodology, which includes descriptive analysis and factor analysis to determine the importance and structure of these motivations. Finally, different company departments and similar groups were examined using cluster analysis to identify their characteristics. The results indicate that, consistent with the main research, the most significant motivations driving the departments to implement TQM through EFQM are internal motivations. The structure of the motivations in this company, as identified in the primary research, includes three categories: internal reasons, required external reasons, and external market reasons.

Keywords: EFQM, TQM, implementation, excellence, motivations

Introduction:

Farsnov Cement Company (Public Joint Stock) is a subsidiary of the Fars and Khuzestan Cement Holding (Public Joint Stock), which itself is part of the Cement Investment Holding, one of the holdings under Shasta (Social Security Investment Company). The construction of the factory's production line began in 2002 and was completed in 2005. Before starting operations, the company, inspired by comparable cement companies, consulted with experts, reviewed by internal specialists, and held multiple meetings with the then-officials to develop the organization's strategic document. This document, drafted in 2007, prioritized the organization's projects based on its strategies. One of these projects was the implementation of excellence models (EFQM). In this regard, in 2008, necessary training courses were held, and with the guidance of consultants, a declaration and self-assessment report were prepared. Over time, and as improvement projects resulting from the model's evaluation were carried out by assessors, the decision to implement TQM programs was made in 2010.

The continually expanding globalization that is currently occurring within the global economy forces businesses to sustain a certain type of sustainable competitive advantage that allows them to protect and improve their competitive status in the market. This signifies the initial phase of the strategic decision-making process when companies focus

their resources on implementing quality-based strategies as a strategic element. In this context, the philosophy of Total Quality Management (TQM) has been adopted by companies as a means of improving activities (internal outcomes) and the performance of these activities (external outcomes) (Alonso, Barcos & Martín, 2006). This adoption enables significant improvements in employee satisfaction, customer satisfaction, and financial performance (Boulter, Bendell & Dahlgaard, 2013; Fuentes, Montes & Fernández, 2006; Nabitz, Jansen, Van der Voett & Van den Brink, 2009; Sadikoglu & Zehir, 2010; Sharma, 2006; Tutuncu & Kucukusta, 2010; Vallejo et al., 2007).

To evaluate companies regarding the development of TQM philosophy and systems within them, several models have been established. These include the Deming Prize model (DP) in Japan, the Malcolm Baldrige National Quality Award (MBNQA) in the United States, and the European Quality Award (EFQM Excellence Model) in Europe. More specifically, the EFQM Excellence Model was created in 1988 by 14 of the largest European companies and is now considered one of the most fundamental and prominent models aimed at achieving organizational excellence (Mokhtar et al., 2012).This framework functions as a self-evaluation resource and a strategic asset, serving as a catalyst in the strategy formation process for integration and establishing a connection between strategic management and business excellence. It results in enhanced flexibility and better performance. (Akyuz, 2014).

In this regard, numerous studies have focused their research on analyzing the EFQM Excellence Model to advance knowledge of the model as a framework for implementing TQM in both public sector organizations (Gómez-Gómez, Martínez, Tomazevic, Seljak & Aristovnik, 2015; Tomazevic, Seljak & Aristovnik, 2014) and private sector organizations (as reviewed recently by Doeleman, Have & Ahaus, 2014). The vast majority of these publications have analyzed the relationship between the EFQM Excellence Model and key business outcomes. In this context, these works support the idea that working with the EFQM Excellence Model can contribute to stakeholder evaluations and key performance results (Bou-Llusar, Escrig-Tena, Roca-Puig, & Beltrán-Martín, 2005, 2009; Boulter, Bendell, Abas, Dahlgaard, & Singhal, 2005; Nabitz et al., 2009; Stewart, 2003; Tutuncu & Kucukusta, 2010).

Another aspect that has been examined is the internal consistency of the model. Evidence supports the reliability and validity of EFQM as a reference framework for implementing, evaluating, and improving quality (Calvo-Mora, Leal, & Roldán, 2005; Bou-Llusar et al., 2009; Santos-Vijande & Alvarez-Gonzalez, 2007.Regarding its practical application, the collected articles mainly emphasize the need to integrate the EFQM Excellence Model into management practices to achieve its full implementation (Davies, 2008; Tutuncu & Kucukusta, 2007) and propose suggestions for potential improvements in implementing the model (Rowland-Jones,

2012). However, the amount of evidence presented in articles examining the implementation process as a research subject is relatively small compared to its contribution to outcomes (Doeleman et al., 2014).

For this reason, the implementation was conducted at Farsnov Cement Company. Specifically, two studies were reviewed that analyzed the motivations for implementing TQM through EFQM from the perspective of independent quality management assessors and practitioners (Heras, Arana, & Casadesús, 2006; Heras-Saizarbitoria, Casadesús, & Marimon, 2011). Their findings indicate that the primary internal motivation of the senior management team to improve significantly enhances the success of implementation (Heras-Saizarbitoria et al., 2011). Additionally, they explore the motivations of organizations using other TQM approaches, such as the ISO standard.

For instance, paying attention to customer demands or aiming for external representation goals is predominantly external (Heras et al., 2006). However, further research is necessary to clarify the real reasons for implementing EFQM from the perspective of quality managers. Since they are specifically appointed to implement the EFQM Excellence Model in the company and to examine the associated barriers, their role is essential for gaining deeper insights into the implementation process of excellence models.

Therefore, the primary objective of this study is to fill this gap by analyzing the motivations that led Farsnov Cement Company to implement TQM through EFQM. To achieve this, we first reviewed the research literature to identify previously studied motivations. Second, we conducted an empirical analysis to determine the importance and structure of these motivations. Finally, the company's different departments were analyzed using cluster analysis to determine their characteristics. To achieve this goal, the study was divided into several sections. The second section presents the theoretical framework used for the research. The third section describes the methodology employed and its results. Finally, the study highlights its limitations and offers suggestions for future research.

Research Background:

To identify the motivations previously studied in the research background, a systematic review of resources was conducted, as such reviews follow an explicit, precise, and transparent method (Fink, 2005). The search stage was carried out based on the following criteria:

1. Focus on TQM Implementation through the EFQM Excellence Model: Only studies that specifically focused on the process of implementing TQM through the EFQM model were selected.

2. Limitation to Academic Resources: The review was restricted to academic sources, excluding non-peer-reviewed articles. The aim was to eliminate any widely recognized papers that did not contribute to the advancement of scientific theory (Sanchez & Blanco, 2014).

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3. Use of Reliable Databases: Online databases such as Web of Science and Scopus were used because they are internationally recognized as credible sources and contain abstracts and full texts of most ISI management journals.

The review covered resources from 1995 to 2014. This period was selected because electronic databases provide full-text articles only from 1995 onward.We used an extensive list of search terms and combinations that had to appear in the article title, abstract, or keywords. After conducting the search, we identified 326 articles (226 from Web of Science and 100 from Scopus). Following a review to ensure no duplicate articles were included, the list was narrowed down to 165 articles .In the next step, articles were excluded if their primary focus was not related to the EFQM Excellence Model (68 articles were removed). The resulting list of 97 articles was further refined using strict criteria, limiting it to those explicitly addressing the motivations for EFQM implementation. The final list consisted of two academic papers authored by Heras et al. (2006) and Heras-Saizarbitoria et al. (2011), which aligned with the findings of previous research conducted by Doeleman et al. (2014).

Table 1.presents the findings on the internal and external reasons that drive companies to implement TQM through the EFQM Excellence Model. Both studies are empirical and agree that improving internal organization and planning is a significant internal reason. Additionally, Heras et al. (2006) provide a strategic framework for companies to carry out their activities, while Heras-Saizarbitoria et al. (2011) emphasize product or service quality.Regarding external motivations, two key reasons—improving the company's image and increasing market share—are identified for implementation. Notably, according to Heras-Saizarbitoria et al. (2011), factors related to improved worker participation (teamwork, motivation, and communication) are of lower importance, which may present a challenge during the TQM implementation process through EFQM. Considering this research gap and recognizing that both the EFQM Excellence Model and the ISO Quality Management System Standard are widely and significantly adopted globally (Doeleman et al., 2014; Heras et al., 2006; Heras-Saizarbitoria et al., 2011; Van der Wiele, Dale, & Williams, 2000), it was decided to include documentation related to the ISO standard in the research background review.This decision can be attributed to the key similarities between the two models as outlined by Kim, Kumar, and Murphy (2010). First, it has been observed that both the EFQM Excellence Model and ISO adhere to the principles of TQM, which have implications across all organizational functions. Second, both models encourage organizations to perform value-added audits. Third, both EFQM and ISO emphasize process management to achieve organizational performance . Moreover, it is noteworthy that the two articles identified in the resource review conducted a comparative analysis of two of the most significant quality management performance models: ISO

and EFQM. To identify the organizational decision-making reasons for undergoing the certification process, a systematic review of resources was conducted using a similar method applied to explore the motivations for implementing the EFQM model.

Tables 2 and 3 present the results of the fundamental internal and external reasons identified in previous studies. This significant body of research can be categorized into three groups. In the first group, the main research conclusion is that external factors are the most critical motivations for decision-making (Anderson, Daly & Johnson, 1999; Buttle, 1997; Gustaffson, Klefsjo, Berggren & Granfors-Wellemets, 2001; Lee & Palmer, 1999; Lipovatz, Stenos & Vaka, 1999; Poksinska, Dahlgaard & Antoni, 2002; Okay & Semiz, 2010; Torre, Adenso-Diaz & Gonzalez, 2001). This group emphasizes the importance of customer demand when companies decide to undergo the certification process. Additionally, another significant reason that leads companies to obtain certification is the need or desire to improve the company's image. It has been shown that their management practices are effective and thus align with both domestic and international market demands .The second group claims that internal factors are the primary motivators during the implementation of ISO (Gotzamani & Tsiotras, 2002; Idris, McEwan, Belavendram, 1996; Skrabec, Raghunathan, Rao & Bhatt, 1997; Tsiotras & Gotzamani, 1996; Withers & Ebrahimpour, 2000). These studies suggest that obtaining ISO certification is the first step in implementing TQM models in the future. As a result, other internal factors reflected in the reviewed studies are focused on continuous improvement, particularly on actual internal improvements that lead to better quality policies, product/service quality improvements, and enhanced quality of internal operations.Finally, the third group suggests that both internal and external factors play a significant role in companies' decisions to begin the certification process (Beattie & Sohal, 1999; Carlsson & Carlsson, 1996; Corbett, Luca & Pan, 2003; Escanciano, Fernández & Vázquez, 2001; Fuentes, Benavent, Moreno, Cruz & Del Val, 2000; Huarng, Horng & Chen, 1999; Lee & Palmer, 1999; Magd & Curry, 2003; Prajogo, 2009; Mariotti, Kadasah, & Abdulghaffar, 2014; Mathews, Ueno, Pereira, Silva, Kekal, & Repka, 2001; Sampaio, Saraiva, & Rodrigues, 2009; Sun & Cheng, 2002; Taylor, 1995; Tsiotras & Gotzamani, 1996; Withers & Ebrahimpour, 1996; , 2001). An analysis of these studies reveals that two internal reasons not previously mentioned in the other groups include the need to reduce costs and decision-making at the company level based on a commitment to quality .

To summarize the findings above, **Table 4** presents the internal and external reasons identified in previous research regarding EFQM and ISO certification. The results obtained from the implementation of the model at Fars Nov Cement Company are quite similar to those found in the study conducted in Spain.

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Experimental Study (Practical Study)

1. Scope of Research: The study was conducted at Fars Nov Cement Company, a subsidiary of the Fars and Khuzestan Cement Holding, which is owned by Sita Holding, part of the Social Security Investment Company (Shasta). The company is in the process of implementing the EFQM Excellence Model. The target population of the study included all departments within the company, totaling 17 departments, with a response rate of 49%. The sample was determined based on the size of the company and the departments. The respondents in this study consisted of managers, supervisors, team leaders, and experts from both technical and administrative departments, including staff from the factory and head office. The participants had varied gender, work experience, and education, with a minimum of a bachelor's degree. All respondents were directly involved in the implementation of the EFQM Excellence Model. Table 5 shows the technical details of the study.
2. Questionnaire:

To design a questionnaire that would enable the study to understand why companies implement TQM through EFQM, we first reviewed the scholarly sources that analyze these motivations (see Table 6). The frequent use of these factors for measuring motivation ensures their internal validity. Based on an existing questionnaire from a foundational article, we designed a questionnaire that measured 14 external and 8 internal reasons using a five-point Likert scale (from 1 – not important to 5 – very important). To assess the validity of the questions, the full questionnaire was sent electronically to 10 experts in the field. After receiving feedback, the validity of the questions was evaluated. To calculate reliability and ensure better representation of the sample to the population, stratified sampling (group sampling) was used. The analysis showed that a sample of 40 people should be selected from the entire organization, and the number of samples was determined based on department groups. The reliability of the questions was then confirmed.

Data Analysis

1. Descriptive Analysis

First, a descriptive analysis was conducted to examine the reasons why the units decided to implement TQM through EFQM. Tables 7 and 8 analyze the mean scores, standard deviations, and the percentage of units in terms of the importance or lack thereof of these reasons. From the obtained mean scores (Tables 7 and 8), it can be concluded that implementing TQM through EFQM is a decision at the unit level (mean = 4.39) aimed at improving internal organization and productivity (mean = 4.27) and serves as a foundation for enhancing the quality management system (mean = 4.16). Additionally, the company aims to demonstrate that its management practices (mean = 4.17) are effective in improving the company's image in the market (mean = 4.07) and its competitive position (mean = 4.02).

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2. External Reasons

Fourteen reasons were identified in the literature. “Application in global markets” (0.387) was excluded due to its very low generality. The Cronbach’s alpha test was performed for the remaining 13 items, yielding a value of 0.835, which indicates a suitable internal consistency of the measurement scale. Using the variance percentage criterion, we found that two external factors account for 45.33% of the total variance. Furthermore, for all items, the factor loadings were acceptable (greater than 0.5) (Table 9). Bartlett’s test of sphericity allowed us to reject the null hypothesis, which states that the variables are uncorrelated, with a high test value and a significance level below 0.05. Reliability analysis for Factor 1 showed a Cronbach’s alpha of 0.749, which could increase to 0.857 if the item “demonstrating the effectiveness of management practices” is excluded from the factor structure. Reliability analysis for Factor 2 yielded a Cronbach’s alpha of 0.854, which indicates that for this factor, to achieve reliability of 0.871, the item “government pressure” should not be included.

3. Internal Reasons

Out of the eight reasons identified in the literature review, the decision-making at the company level (with a very low factor of 0.386) was excluded. The Cronbach’s alpha for the remaining seven items was 0.805, indicating an appropriate internal consistency of the measurement scale. It was found that two factors explain 64.9% of the total variance, with factor loadings exceeding 0.5 (Table 10). Bartlett’s test of sphericity enabled us to reject the null hypothesis that suggests the variables are uncorrelated, with a high test value and significance below 0.05. The reliability analysis for Factor 1 yielded a Cronbach’s alpha of 0.884, indicating that all items should be included for this factor’s construction. However, the reliability analysis for Factor 2 showed a Cronbach’s alpha of 0.375, suggesting that the reliability is below the acceptable threshold. Therefore, the eight primary questions were considered as a single factor, and the reliability analysis revealed that “company survival” should not be considered in the factor structure. The overall reliability for the scale was 0.816.

Interpretation of the Factors

The reasons summarized into three factors are as follows:

- Factor 1: “External Market Reasons”: This includes improving the company’s status and competitive position, demonstrating the effectiveness of management practices, forecasting future customer demand, anticipating market trends, and gaining commercial advantages.
- Factor 2: “Required External Reasons”: This includes requirements from customers, competitors, suppliers, national and international markets, governments, and competition requirements in each sector to increase market share.

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- Factor 3: “Internal Reasons”: This includes decision-making at the company level, improving internal organization and productivity, improving product/service quality, optimizing necessary resources, motivating employees, laying the foundation for improving the quality management system, and cost reduction.

Conclusion of the Analysis

The significance of the three factors can be summarized as follows:

As shown in Table 11, the most important reasons for implementing TQM through EFQM are internal reasons, with a mean of 3.8495, compared to external market reasons (mean = 3.5974) and required external reasons (mean = 2.5099).

۴.Cluster Analysis

After conducting the factor analysis to select the relevant variables for defining the groups, we continued with hierarchical cluster analysis using the “Ward’s method” and Euclidean distance, given the sample size. The goal was to group the units based on the motivations that drove them to implement TQM through EFQM. There is no universal method to determine the number of clusters. In this study, we reviewed the dendrogram and the coefficient of determination (R^2).

As shown in Table 12, based on the coefficients of determination, there is a significant difference between the percentage of change across the three clusters (58.66%). Therefore, the number of groups was determined based on this criterion.

Finally, the study was validated using one-way ANOVA analysis, which confirmed that three important factors were identified (Table 13).

Interpretation of Results and Cluster Profiles

According to the results presented in Table 14, it can be concluded that internal reasons are the most important, as their average values in the first two groups, which make up 38.80% of the sample, are greater than 4 (important/very important). This result allows us to confirm the findings from the previous descriptive analysis.

Next, we define the three groups created and explain their differences. To complete the interpretation of the groups, we use the main variables that represent the percentage of units in each group, which are categorized as important or very important.

- Group 1: This group consists of 8 units with very high motivation, showing the highest values in the studied motivations. These are units where implementation was driven by senior management initiatives aimed at improving internal organizational efficiency and productivity, as well as enhancing their competitive position. These three reasons, two internal and one external, are equally important in this group. Additionally, required external reasons are considered

more important than external market reasons. In this group, the research to increase market share and the need for competition in each sector are the most important reasons.

- Group 2: This group includes 5 units with medium motivation, clearly focused on "improving internal organization and productivity" through the implementation of TQM via EFQM. This group showed the lowest values for "required external reasons", while "improving their competitive position" was the primary external market reason.
- Group 3: This group consists of 4 low-motivation units with the lowest values across all motivations. Specifically, these are units that decide to implement TQM through EFQM as a "unit-level decision" to "improve the quality management system" and as "a requirement for competition in the sector". Moreover, the main goal of implementation for these units is to "improve the company's image in the market".

Thus, the analysis highlights how different levels of motivation influence the decision-making processes behind implementing TQM through EFQM across different organizational units.

Analysis

Based on the literature review, two important points emerge:

1. Current Research Focus: The majority of current articles primarily focus on performance measurement and internal alignment within the EFQM framework. However, there is a gap in research regarding the reasons that drive companies to implement TQM through EFQM. This aligns with the findings of Doeleman et al. (2014), who provided a summary of the existing empirical evidence on EFQM. This gap emphasizes the need for further investigation into the motivations and decision-making factors behind adopting the EFQM model.
2. Internal and External Reasons: It appears that the internal and external reasons identified in the literature for organizational excellence align with those collected in studies related to ISO certification, with one exception: the "strategic framework" factor identified by Heras et al. (2006). When we consider the implementation of TQM using EFQM, it serves as a process for continuous improvement within a new framework aimed at organizational enhancement, which is part of the reasoning provided by Rowland-Jones (2012). This theoretical finding indicates the necessity for further research to comprehensively and precisely cover aspects of the EFQM model, particularly regarding the process and reasons for implementing it.

Senior Management Commitment: The importance of senior management's role

in driving organizational change and improvement is clearly emphasized in the literature. Research highlights the need for evidence of commitment to the development and enhancement of the quality management system, as noted by Soltani (2005), Samuelsson & Nilsson (2002), and Russell (2000). This reflects the critical role that leadership plays in ensuring the successful implementation of TQM through EFQM, supporting the need for more research into how leadership influences the adoption of such models.

These insights underscore the necessity for additional studies that can delve deeper into the reasons for EFQM implementation and examine its relationship with other models, such as ISO, to further enhance understanding and application.

The most Important external reasons relate to “demonstrating the effectiveness of management practices,” highlighting the significance of EFQM as a tool for comparing an organization to its competitors in order to achieve and/or maintain a competitive advantage (Santos, Alvarez, & Gonzalez, 2007). In summary, both internal and external motivations drive units to implement TQM through EFQM, although internal reasons are of greater importance. These results are empirically supported by the average factor analysis and align with the findings of Heras et al. (2006) and Heras-Saizarbitoria et al. (2011). However, the importance of these reasons varies from study to study. Factors related to the requirements of customers, sectors, suppliers, competitors, and both national and international markets have little significance for these units.

This approach is supported by numerous studies that highlight market-driven reasons, such as competitive pressure or customer demands. It is concluded that market reasons weigh more heavily in units following quality assurance methods compared to those following general quality management methods (Beattie & Sohal, 1999; Huarng et al., 1999). This indicates that the emphasis on external factors like market dynamics and competitive pressure may be more pronounced in certain contexts, while internal factors related to improving organizational processes and productivity remain a primary driver across most units.

Finally, this paper outlines the structure of motivations and profiles of the units. The analysis of the results allows us to categorize motivations into three groups: (1) “External Market Reasons,” (2) “Required External Reasons,” and (3) “Internal Reasons.” These three groups exhibit a good level of internal consistency and reliability of the measurement scale. The main outcome of these findings is that the validity of the three measurement scales for motivations to implement the EFQM excellence model, considering external reasons, was presented in two distinct groups .

Based on the profiles of the units, highly motivated units implement TQM through EFQM due to the decision of senior management teams, while those with moderate motivation do so to improve

internal processes and productivity. The third group, characterized by low average scores across each factor, uses EFQM as a foundation for improving their quality management system and meeting competitive pressures in their sector. These low-motivated units may be initially driven by their competitors rather than internal beliefs, marking the beginning of their excellence journey.

These findings cannot be contrasted with prior research, as those studies tend to be mainly descriptive and have not employed statistical methods similar to those demonstrated here. Additional empirical investigations are necessary to create a chance to examine and apply these results across various organizations or sectors.

Conclusion

In this study, we examined the motivations that drive different units of Fars Cement Company to implement TQM through the EFQM Excellence Model. By reviewing the literature, both internal and external motivations were identified. The results from the survey questionnaires administered to the units implementing the EFQM model showed that internal reasons hold greater significance for the units studied, which directly aligns with the results of the main research. Factorial and cluster analyses were conducted to empirically determine the structure of motivations and the profiles of the units.

The main contribution of this paper is that it represents the first study examining the motivations behind EFQM implementation from the perspective of the management team, which specifically led to the implementation of the EFQM excellence model in the company. As a result, the findings of this study are particularly interesting and important for practitioners, as they are part of a group highly interested in the process of promoting excellence models. We also believe that quality enhancement factors (such as foundations, associations, consultancies, etc.) should make special efforts to clarify and explain how the implementation of the EFQM excellence model can serve as a path for improving the internal efficiency of organizations and can be used as a foundation for improving their quality management systems. Senior management teams should be made aware of this.

Finally, several limitations of this study should be noted. This research is based on cross-sectional data from 17 units of the company. The study is exploratory and was conducted to enhance knowledge about the EFQM model, as very few studies have been conducted worldwide to investigate the reasons that drive companies to implement TQM through EFQM.

Suggestions

Future studies with larger samples from organizations are crucial to build upon this research. We also recommend performing investigations at the level of cement holdings and various other industries, taking into account elements that may be associated with the phase of executing the excellence process. For instance, elements that support or ensure

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the application of TQM through the EFQM model ought to be examined, as well as evaluating whether internal or external motivations have distinct impacts on the advantages. Likewise, it would be valuable to investigate the connection between clusters and other factors, such as performance, and assess whether disparities exist among the groups.

"Table 1: Reasons for Implementing the Process through EFQM"

"Heras-Saizarbitoria and colleagues, 2011"	Heras and colleagues (٢٠٠٦)	Internal Reasons
x	x	Improvement of Internal Organization and Company Planning
x		Improvement of Product/Service Quality
	x	Strategic Framework
		External Reasons
x		Increasing market share
	x	Enhancing the Company's Image

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Table 2: External Reasons for Certification

Lipovatz et al. (1999)	Lee and Palmer (1999)	Huarng et al. (1999)	Beattie and Sohal (1999)	Anderson et al. (1999)	Buttle (1997)	Withers and Ebrahimpour (1996)	Tsiotras and Gotzamani (1996)	Carlsson and Carlsson (1996)	Taylor (1995)	
			X			X			X	customer deman
		X					X		X	Improving the company in the market
	X	X	X				X			Enhancing competitive
X							X	X		Responding to confl national and internationa
	X	X				X				Operating in global m
			X							Government press
										Competitive needs in ea
					X					Future Customer De Forecasting
	X									Supplier pressur
										Competitor pressu
				X						Demonstrating the effe of management met
										Predicting market tr
										Benefits of commercia
										Increasing market s

Table 2:

Sampaio et al. (2009)	Prajogo (2009)	Magd and Curry (2003)	Corbett et al. (2003)	Sun and Cheng (2002)	Poksinska et al. (2002)	Withers and Ebrahimpour (2001)	Torre et al. (2001)	Mathews et al. (2001)	Gustaffson et al. (2001)	Escanciano et al. (2001)	
X	X	X	X	X			X	X	X		customer deman
	X		X		X			X		X	Improving the company in the market
								X			Enhancing competitive
X											Responding to confl national and interna markets
											Operating in global m
		X									Government press
						X				X	Competitive needs in ea
										X	Future Customer De Forecasting
	X										Supplier pressu
	X	X									Competitor press
											Demonstrating the effe of management me
										X	Predicting market t
			X								Benefits of commercia
		X									Increasing market s

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Table 3: Internal Reasons for Issuing a Certificate

and / our	Fuentes et al. (2000)	Lee and Palmer (1999)	Huarng et al. (1999)	Beattie and Sohal (1999	Skrabec et al. (1997)	Withers and Ebrahimpour (1996)	Tsiotras and Gotzamani (1996)	Idris et al. (1996)	Carlsson and Carlsson (1996)	Taylor (1995)	
				X	X	X	X	X	X		Laying the Foundation for Ir Your Quality Management
					X		X	X		X	Internal Organizational Impr and Productivity
		X	X			X				X	Improvement of Product/S Quality
	X										Company-Level Decis
						X					Cost Reduction
						X					optimization of necessary re
											Employee Motivatio
											company survival

Table 4: "Internal Reasons and External Reasons for EFQM and Standard Certification"

Reasons	References	
Improving the Company's Image, Enhancing competitive position , customer demand, Increasing market share, Responding to conflicts in national and international markets , Operating in global markets, Demonstrating the effectiveness of management methodsى, Future Customer Demand Forecasting, Predicting market trends , Benefits of commercialization , Competitive needs in each sector , Supplier pressure, , competitive pressures , Government pressure	Taylor (1995), Tsiotras and Gotzamani (1996), Huarng et al. (1999), Escanciano et al. (2001), Gustafson et al. (2001), Mathews et al. (2001), Poksinska et al. (2002), Corbett et al. (2003), Heras et al. (2006), Prajogo (2009), Beattie and Sohal (1999), Lee and Palmer (1999), Withers and Ebrahimpour (1996), Fuentes et al. (2000), Torre et al. (2001), Sun and Cheng (2002), Magd and Curry (2003), Heras-Saizarbitoria et al. (2011), Carlsson and Carlsson (1996), Lipovatz et al. (1999), Anderson et al. (1999), Buttle (1997), Withers and Ebrahimpour (2001)	External Reasons
Company-Level Decision, Organizational Improvement and Productivity Enhancement, Laying the Foundation for Improving Your Quality Management System, Improvement of Product/Service Quality, optimization of necessary resources , Employee Motivation , Cost Reduction, company survival	Fuentes et al. (2000), Mathews et al. (2001),Withers and Ebrahimpour (2001), Sun and Cheng (2002), Taylor (1995), Idris et al. (1996), Tsiotras and Gotzamani (1996), Skrabec et al. (1997), Escanciano et al. (2001), Magd and Curry (2003), Prajogo (2009), Gotzamani and Tsiotras (2002), Heras et al. (2006), Heras-Saizarbitoria et al. (2011), Withers and Ebrahimpour (1996), Huarng et al. (1999), Lee and Palmer (1999), Withers and Ebrahimpour (2000), Carlsson and Carlsson (1996), Beattie and Sohal (1999), Corbett et al. (2003)	Internal Reasons

Table5: technical study information

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	Technical information
Internal units of Fars Nov Cement Company that implemented the EFQM Excellence Model for the years 2008-2018	Target population
Fars Nov Cement Company	Geographical Region
17 units	Population
(May–July 2023)	Data collection time
45 valid questionnaires	Sample size
۴۹٪	Response rate
Questionnaire distribution	Data collection method

Table6: Validity of the contents of measurement scales.

References	External Reasons
Taylor (1995), Tsiotras and Gotzamani (1996), Huarng et al. (1999), Escanciano et al. (2001), Gustafson et al. (2001), Mathews et al. (2001), Poksinska et al. (2002), Corbett et al. (2003), Heras et al. (2006), Prajogo (2009), Mariotti et al. (2014)	Improving the Company's Image
Tsiotras and Gotzamani (1996), Beattie and Sohal (1999), Huarng et al. (1999), Lee and Palmer (1999), Mathews et al. (2001)	Enhancing competitive position
Taylor (1995), Withers and Ebrahimpour, (1996), Beattie and Sohal (1999), Fuentes et al. (2000), Gustafson et al. (2001), Mathews et al. (2001), Torre et al. (2001), Sun and Cheng (2002), Corbett et al. (2003), Magd and Curry (2003), Prajogo (2009), Sampaio et al. (2009), Mariotti et al. (2014)	customer demand
Magd and Curry (2003), Sampaio et al. (2009), Heras-Saizarbitoria et al. (2011)	Increasing market share
Carlsson and Carlsson (1996), Tsiotras and Gotzamani (1996), Lipovatz et al. (1999), Sampaio et al. (2009);	Responding to conflicts in national and international markets
Withers and Ebrahimpour (1996), Huarng et al. (1999), Lee and Palmer (1999)	Operating in global markets
Anderson et al. (1999)	Demonstrating the effectiveness of management methods
Buttle (1997), Escanciano et al. (2001)	Future Customer Demand Forecasting
Escanciano et al. (2001), Mariotti et al. (2014)	Predicting market trends
Corbett et al. (2003)	Benefits of commercialization
Escanciano et al. (2001), Withers and Ebrahimpour (2001), Mariotti et al. (2014)	Competitive Requirements in the Sector
Lee and Palmer (1999), Prajogo (2009), Mariotti et al. (2014)	Supplier pressure
Magd and Curry (2003), Prajogo (2009	Competitor pressure
Beattie and Sohal (1999), Fuentes et al. (2000), Magd and Curry (2003)	Government pressure
References	Internal Reasons

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Fuentes et al. (2000), Mathews et al. (2001), Withers and Ebrahimpour (2001), Sun and Cheng (2002), Okay and Semiz (2010)	Company-Level Decision
Taylor (1995), Idris et al. (1996), Tsiotras and Gotzamani (1996), Skrabec et al. (1997), Escanciano et al. (2001), Mathews et al. (2001), Magd and Curry (2003), Prajogo (2009), Gotzamani and Tsiotras (2002), Heras et al. (2006), Sampaio et al. (2009), Heras-Saizarbitoria et al. (2011), Mariotti et al. (2014)	Organizational Improvement and Productivity Enhancement
Mathews et al. (2001)	optimization of necessary resources
Mathews et al. (2001)	Employee Motivation
Taylor (1995), Withers and Ebrahimpour (1996), Huarng et al. (1999), Lee and Palmer (1999), Withers and Ebrahimpour (2000), Escanciano et al. (2001), Gotzamani and Tsiotras (2002), Prajogo (2009), Okay and Semiz (2010), Heras-Saizarbitoria et al. (2011)	Improvement of Product/Service Quality
Carlsson and Carlsson (1996), Idris et al (1996), Tsiotras and Gotzamani (1996), Withers and Ebrahimpour (1996), Skrabec et al. (1997), Beattie and Sohal (1999), Withers and Ebrahimpour (2000), Gotzamani and Tsiotras (2002), Corbett et al. (2003), Heras et al. (2006), Prajogo (2009), Okay and Semiz (2010)	Laying the Foundation for Improving Your Quality Management System
Withers and Ebrahimpour (1996), Sun and Cheng (2002), Mariotti et al. (2014), Okay and Semiz (2010)	Cost Reduction
Sun and Cheng (2002)	company survival

Table 7: External Reasons for Implementing TQM through the EFQM Model.

Very important (4 to 5 points) % of companies	Not important (1 to 3 points) % of companies	Standard deviation	Mean 1 to 5	
۸۵/۳	۱۴/۷	۱/۰۰۷	۴/۱۷	Demonstrating the effectiveness of management methods
۷۶/۵	۲۳/۵	۰/۸۷۶	۴/۰۷	Improving the Company’s Image
۷۹/۴	۲۰/۶	۱/۰۹۱	۴/۰۲	Enhancing competitive position
۵۷/۴	۴۲/۶	۱/۲۲۸	۳/۴۹	Future Customer Demand Forecasting
۵۰	۵۰	۱/۲۵۵	۳/۳۵	Predicting market trends
۴۴/۱	۵۵/۹	۱/۱۴۵	۳/۰۶	Increasing market share
۳۸/۲	۶۱/۸	۱/۱۹۷	۳	Benefits of commercialization
۳۶/۸	۶۳/۲	۱/۴۰۳	۲/۸۷	Competitive Requirements in the Sector
۳۰/۹	۶۹/۱	۱/۲۸۴	۲/۶۹	Responding to conflicts in national and international markets
۲۳/۵	۷۶/۵	۱/۱۹۱	۲/۵۱	customer demand
۱۳/۲	۸۶/۸	۱/۰۸۷	۲/۲۱	Competitor pressure
۱۴/۷	۸۵/۳	۱/۱۶۲	۲/۱۵	Operating in global markets
۷/۴	۹۲/۶	۱/۱۲۳	۱/۸۵	Government pressure
۱/۵	۹۸/۵	۰/۸۶۱	۱/۷۲	Supplier pressure

Table 8: Internal Reasons for Implementing TQM through the EFQM Model.

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Very important (4 to 5 points) % of companies	Not important (1 to 3 points) % of companies	Standard deviation	Mean 1 to 5	
۸۶/۸	۱۳/۲	۰/۹۳۱	۴/۳۹	Company-Level Decision
۸۵/۳	۱۴/۷	۰/۹۴۴	۴/۲۷	Organizational Improvement and Productivity Enhancement
۸۳/۸	۱۶/۲	۱/۰۲۶	۴/۱۶	Laying the Foundation for Improving Your Quality Management System
۷۳/۵	۲۶/۵	۱/۰۴۴	۴/۱۶	Improvement of Product/Service Quality
۶۶/۲	۳۳/۸	۰/۹۸۷	۳/۸۴	optimization of necessary resources
۵۵/۹	۴۴/۱	۱/۰۷۲	۳/۴۷	Employee Motivation
۲۷/۹	۷۲/۱	۱/۰۰۴	۲/۹۱	Cost Reduction
۲۷/۹	۷۲/۱	۱/۱۵۲	۲/۶۸	company survival

Table 9: Rotation Matrix External Reasons

factors		
۲	۱	
	۰/۶۰۵	Improving the company’s image in the market
	۰/۷۶۰	Enhancing competitive position
	۰/۵۹۶	Demonstrating the effectiveness of management methods
	۰/۸۳۹	Future Customer Demand Forecasting
	۰/۸۵۴	Predicting market trends
	۰/۶۷۹	Benefits of commercialization
۰/۶۱۳		customer demand
۰/۶۱۵		Increasing market share
۰/۵۲۲		Responding to conflicts in national and international markets
۰/۷۹۴		Competitive needs in each sector
۰/۸۰۴		Supplier pressure
۰/۷۸۵		Competitor pressure
۰/۵۴۴		Government pressure

Table 10: Matrix of Evolved Factors Internal Reasons

factors		
۲	۱	
	۰/۷۹۷	Organizational Improvement and Productivity Enhancement
	۰/۷۵۲	optimization of necessary resources
	۰/۸۱۶	Employee Motivation
	۰/۵۹۰	Improvement of Product/Service Quality
	۰/۶۴۳	Laying the Foundation for Improving Your Quality Management System
۰/۸۳۶		Cost Reduction
۰/۶۹۴		company survival

Table 11: Importance of Reasons

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Standard deviation	Mean (1 to 5)	Factors
۰/۸۹۹۴۱	۳/۵۹۷۱	Reasons for Foreign Market
۰/۸۶۴۲۹	۲/۵۰۹۸	Required External Reasons
۰/۶۸۷۹۵	۳/۸۴۸۷	Internal Reasons

Table 12: Correlation Coefficient of Reasons for Implementing TQM through the EFQM Model

Difference in percentage change	Percentage change in coefficient	Density coefficient	number of groups
-۷۷/۲۹	۱۵۸/۶۲	۱۴/۵۰	۱۷
-۳۴/۲۷	۸۱/۳۳	۳۷/۵۰	۱۶
-۱۴/۰۶	۴۷/۰۶	۶۸/۰۰	۱۵
-۵/۵۶	۳۳/۰۰	۱۰۰/۰۰	۱۴
-۳/۸۴	۲۷/۴۴	۱۳۳/۰۰	۱۳
-۰/۹۳	۲۳/۶۰	۱۶۹/۵۰	۱۲
-۲/۱۸	۲۲/۶۷	۲۰۹/۵۰	۱۱
-۰/۰۱	۲۰/۴۹	۲۵۷/۰۰	۱۰
-۳/۳۱	۲۰/۴۸	۳۰۹/۶۷	۹
-۰/۸۸	۱۷/۱۸	۳۷۳/۱۰	۸
-۲/۱۰	۱۶/۳۰	۴۳۷/۱۸	۷
-۱/۶۵	۱۴/۱۹	۵۰۸/۴۳	۶
۷/۹۵	۱۲/۵۴	۵۸۰/۶۰	۵
-۳/۳۷	۲۰/۵۰	۵۶۳/۴۳	۴
۵۸/۵۶	۱۷/۱۲	۷۸۷/۳۷	۳
	۷۵/۶۸	۹۲۲/۲۰	۲
		۱۶۲۰/۱۷	۱

Table 13: Analysis of Variance

Sig.	**F**	**Variable**
۰/۰۰۰	۱۷/۰۱	Factor 1 (Factor score) Reasons for Foreign Market
۰/۰۰۰	۶/۵۱۲	Factor 2 (Factor score) Required External Reasons"
۰/۰۰۰	۱۴/۶۵	"Factor 3 (Factor score) Internal Reasons"

Table 14: The means of the factors and statistical tests confirm the differences.

			mean		
Kruskal–Wallis		Very low motivated companies	Moderately motivated companies	Highly motivated companies	
Sig.	Chi-squared	n=13	n=31	n=24	
۰/۰۰۰	۲۰/۵۲۹۷	۲/۵۳۸۵	۳/۷۵۴۸	۳/۹۶۶۷	Reasons for Foreign Market
۰/۰۰۳	۱۱/۲۱۲۴	۱/۸۵۹۰	۲/۵۱۱۶۱	۲/۸۵۴۲	Required External Reasons
۰/۰۰۰	۱۴/۷۷۷۷	۰/۰۶۵۹	۴/۰۲۷۶	۴/۰۴۱۷	Internal Reasons

References

۱- استوارت, ۲۰۰۳
۲- آندرسون, دالی و جانسون, ۱۹۹۹
۳- گوستافسون, کلفسو, برگگن و گرانفورس- واللمتس, ۲۰۰۱
۴- لی و پالمر , ۱۹۹۹
۵- نابیتز و همکاران, ۲۰۰۹
۶- ویترس و ابراهیم پور , ۲۰۰۰
۷- نوژن, رامین, ۱۳۹۸

8- Akyuz, 2014
9- Alonso, Barcos & Martı'n, 2006
10- Bou-Llusar et al., 2009
11- Bou-Llusar, Escrig-Tena, Roca-Puig, & Beltra'n-Martí'n, 2005, 2009
12- Boulter, Bendell & Dahlgaard 2013
13- Boulter, Bendell, Abas, Dahlgaard, & Singhal, 2005
14- Buttle, 1997
15- Calvo-Mora, Leal, & Rolda'n, 2005
16- Davies, 2008
17- Doeleman, et al, 2014
18- Fink, 2005
19- Fuentes, Montes & Ferna'ndez 2006
20- Go'mez-Go'mez, Martínez , "Tomazevic, Seljak & Aristovnik, 2015
21- Heras Saizarbitoria, Casadesu , & Marimonc, 2011
22- Heras, Arana, & Casadesu, 2006
23- Idris, McEwan, Belavendram, 1996
24- Lipovatz, Stenos, & Vaka, 1999
25- Mokhtar, et al, 2013
26- Nabitz, Jansen, Van der Voett & Van den Brink, 2009
27- Okay & Semiz 2010
28- Poksinska, Dahlgaard, & Antoni, 2002
29- Rowland-Jones, 2012
30- Russell, 2000
31- Sadikoglu & Zehir, 2010
32- Samuelsson & Nilsson, 2002
33- Sanchez & Blanco, 2014
34- Santos-Vijande & Alvarez-Gonzalez, 2007
35- Sharma, 2006
36- Skrabec, Raghunathan, Rao & Bhatt, 1997
37- Soltani, 2005
38- Tomazevic, Seljak & Aristovnik, 2014
39- Torre, Adenso-Diaz & Gonzalez, 2001

40- Tsiotras & Gotzamani, 1996
41- Tutuncu & Kucukusta, 2007
42- Tutuncu & Kucukusta, 2010
43- Vallejo ,et al, 2007