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# **Exploring the Dimensions Using Exploratory Factor Analysis of European foundation for quality management's enablers and Competitive Advantages**

Lama Talal Khrais

Faculty of Business and Management Universiti Sultan Zainal Abidin, Gong Badak,  
Kuala Terengganu, Malaysia

Noor Aina Amirah

Senior Lecturer, Faculty of Business and Management Universiti Sultan Zainal Abidin,  
Gong Badak, Kuala Terengganu, Malaysia

<https://orcid.org/0000-0001-6279-6348>

## **Abstract**

The pharmaceutical industry is directly linked to human lives and faces disturbing problems. Therefore, the European foundation for quality management's enablers minimize risks associated with deficiency of medicines, technological development, and experience. The study was carried out to find the Effect of the European foundation for quality management's enablers on Jordanian pharmaceutical companies to gain competitive advantages. 100 respondents were randomly selected from 15 pharmaceutical companies in Jordan. An exploratory factor analysis was performed and a structured questionnaire was used to summarize the research objectives. Research has shown the effectiveness of EFQM Enablers in gaining a competitive advantage. Finally, reliability testing was performed to determine acceptable levels. The study expands the scope of European foundation for quality management's enablers (EFQM) enablers for Jordanian pharmaceutical companies. However, this study is geographically limited and should be extended to other regions. Moreover, the study results should serve as insightful numbers for Jordanian pharmaceutical companies in identifying persistent performance issues.



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**Keywords:** EFQM model, EFA , Healthcare management, Jordanian pharmaceutical companies, Leadership, People, Process, Partnership and resources, pharmaceutical industries, Public healthcare, strategy.

## **1.Introduction**

Jordanian pharmaceutical companies are currently witnessing many challenges and restrictions imposed by globalization and increasing technological developments, as well as the increase in global competition and the continuous change in consumer behavior and requirements. In order for these companies to excel in their field, maximize their profits, and sit on top of the competing companies, they had to make every effort to adopt new practices and updated mechanisms, establish their rules in companies, and work to apply them professionally and distinctly, Perhaps the most important of these practices is the EFQM model as a means of continuity and enhancing its competitive advantage and improving the level of services and pharmaceutical products it provides to the local and international markets (Moeller,2001).

Companies control department in Jordan indicate that 13 pharmaceutical companies closed due to the reasons mentioned above. This study highlighted the effect of EFQM business excellence models on Jordanian pharmaceutical companies and their impact on competitive advantages, as the results of many kinds of literature have shown, from its effectiveness in achieving a high competitive advantage, and improving the services and goods provided.

## **2. Research objectives**

The study would investigate the effect of EFQM enablers on Jordanian pharmaceutical companies to gain competitive advantages, the following specific objectives are drawn :

1. To determine the significant positive effect of the leadership on the competitive advantages.
2. To determine the significant positive effect of people on the competitive advantages .
3. To determine the significant positive effect of strategy on the competitive advantages



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4. To determine the significant positive effect of partnership and resources on the competitive advantages.
5. To determine the significant positive effect of process on the competitive advantages.

### **3. Research questions**

1. Does the leadership has a significant positive effect on the competitive advantages?
2. Do people have a significant positive effect on the competitive advantages?
3. Does the strategy has a significant positive effect on the competitive advantages?
4. Does the partnerships and recourses has a significant positive effect on the competitive advantages?
5. Does the process has a significant positive effect on the competitive advantages?

## **4.Literature review**

### **4.1 Leadership and competitive advantages**

Hili et al. (2017) reported Human capital, organizational learning, and leadership have a significant positive effect on organizational performance. Effect among other variables show that human capital, leadership, and agency performance have a significant positive effect on competitive advantage. Samsir (2018) indicated that leadership mentoring has a significant impact on innovation. Higher leadership standards lead to higher innovation. Innovation has a significant impact on competitive advantage. Greater innovation leads to greater competitive advantage. Innovation as a mediating variable in the relationship between leadership orientation and competitive advantage shows that higher leadership orientation leads to higher competitive advantage, even though mediation innovation is higher. Hunitie's (2018) results showed that strategic leadership significantly predicted strategic planning, strategic thinking, and competitive advantage. The results also showed that strategic planning and thinking were significantly and positively associated with a competitive advantage. Strategic planning and strategic thinking are therefore agreed to inform the



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impact of strategic leadership on competitive advantage, Priadana et al. (2021) concluded that strategic leadership has a significant impact on performance, competitive strategy has no impact on performance, and strategic leadership has a greater impact on competitive strategy.

#### **4.2 People and competitive advantages**

Kumar & Pansari (2016) found that while both customer engagement and employee engagement positively influence company performance, the effect of customer engagement on company performance is stronger. Furthermore, the impact of customer engagement and employee engagement on performance is improved for B2B (vs. B2C) and service (vs. manufacturing) firms. Le (2020) the results show that employee development and marketing skills, directly and indirectly, impact competitiveness through product innovation. The results provide organizations with important implications for improving their competitive advantage in terms of marketing, human resources, and product innovation..

#### **4.3 Strategy and competitive advantages**

Gareche et al. (2019) eight different areas were considered: strategic management, strategic marketing management, marketing management, information technology, knowledge management, resource-based theory, entrepreneurship, and human resource management. Consequently, among the many available approaches, the majority of companies use Porter's three strategies (differentiation, centralization, and cost leadership) to achieve competitive advantage. I understand. Of the three strategies, the differentiation strategy is the one that gets the most attention, and the use of all three strategies at the same time is rare. The results of Yasa et al. (2020) showed that advertising strategy has had a significant positive impact on competitive advantage, and advertising strategy has significantly improved competitive advantage. Additionally, competitive advantage has a significant positive impact on achieving marketing performance. This means that a higher competitive advantage can lead to better marketing performance, and competitive advantage can significantly convey the impact of advertising strategy on marketing performance. The results of Puspita et al. (2020) indicate that strategic direction and supply chain capabilities have a significant impact on competitive advantage and organizational performance. Innovation ability influences competitive advantage but does not



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significantly affect the performance of furniture retailers. Clauss et al. (2021) state that companies should prefer exploratory strategies for innovation processes that generate fundamentally new knowledge, products, and services, or combine exploitation strategies with strategic agility. Although individual exploitation strategies do not help increase competitive advantage, exploitation strategies appear to adversely affect corporate competitive advantage.

#### **4.4 Partnership and resources and competitive advantages**

Chen's (2019) study shows that both IT integration and trust in supply chain members can significantly improve supply chain agility and innovation, positively impacting a company's competitive advantage. The results show that IT integration and trust are an important common partnership precedent and resource for improving supply chain resilience and innovation. According to Liu (2021), SMEs need to put more effort into maintaining the quality of their partnerships. Second, internal coordination and agility to overcome limited resources and development, address market changes and customer needs, and create a distinct competitive advantage for further development in one organization.. The results of Mardatillah et al. (2020) endorsed the resource-based view that valuable, scarce, and imperfectly replicable resources are essential to achieving sustainable competitive advantage. The company's highly distributed resources provide a greater sustainable competitive advantage.

#### **4.5 Process and competitive advantages**

The results of Daengs et al. (2022) indicated that Information quality has a significant impact on product quality, the quality of information has a significant impact on response, Product quality has a significant impact on response, Product quality has a significant impact on competitive advantage, Response has a significant impact on competitive advantage. Marakova et al. (2021) indicated that exploratory factor analysis can be applied to build an initial factor model of the source of a firm's competitive advantage, identifying three factors: marketing, innovation, and corporate social responsibility. This indicates that marketing activities, innovation activities, and the application of corporate social responsibility are major sources of competitive advantage in large organizations operating in the market.. The results of Kusumadewi & Karyono (2019) indicate that service quality can impact competitive advantage.



Davcik & Sharma (2016) assert that competitive advantage is significantly influenced by IT investments that affect product effectiveness.

## **5. MATERIAL AND METHODS**

This study used a quantitative study design and performed the Exploratory Factor Analysis procedure for item scale validation with the Social Science Statistics Package. (Amirah, Asma, Muda, Amin, & Him, 2019). Exploratory factor analysis was used to find the relationship between items' shared common variances and the individual item variance.

### **5.1 Data collection**

Structured questionnaires from managerial staff (Top and middle )management from all Jordanian pharmaceutical companies located in Jordan.

### **5.2 Target Population, Sampling Technique, and Sample Size**

The population consisted of 15 Jordanian pharmaceutical companies based in Jordan. A simple random sample was used to generalize the observed features, and selected 100 respondents for data collection. (Amirah et.al ,2019) .

## **6. Results and discussion**

To measure sample size adequacy, Kaiser-Meyer-Olkin(KMO) was used. The KMO results in Table 1expressed that the KMO values for all constructs (Leadership,People,partnershipandresources,strategy,process,competitive advanatages) are > 0.6 which shows, the size of sample is adequate and is fit for factor analysis (Beavers, Lounsbury, Richards, & Huck, 2013).

Additionally, the Bartlett sphericity test was < 0.000, which is significant for each variable and acceptable as it provides a realistic basis for factor analysis. (Beavers et al., 2013; Hashmi et al., 2020a). Varimax rotation with principal axis factorization (PAF) used to measure item structure. Varimax rotation assumes that the factors remain independent and that the resulting factors are as uncorrelated with each other as possible. Finally, factor rotation was used to interpret the underlying structure of the factors Principal axis factorization (PAF) was applied to measure the shared variance among the extractable factors. A common criterion for factor extraction is eigenvalues > 1.0 (Osborne et al, 2008). The first two factors were extracted from each construct and are shown in Table 2. leadership, people, strategy, partnerships



and resources, and process. Moreover, more than 60% of the overall change in total variance was contributed by each extracted factor variable(Awang,2015).

Table-1.KMOand Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		Leadership	People	Strategy	Partnership & resources	Process	Competitive Advantages
		0.870	0.905	0.885	0.797	0.844	0.871
Bartlett's Test of Sphericity (Sig.)	Approx. Chi-Square	525.705	556.688	568.255	327.676	534.444	513.978
	Df	45	45	45	28	45	45
	Sig.	0.000	0.00	0.00	0.00	0.00	0.00

Table-2.Total variance explained

Leadership						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.470	54.704	54.704	5.470	54.704	54.704
People						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.732	57.316	57.316	5.732	57.316	57.316



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Strategy						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.638	56.376	56.376	5.638	56.376	56.376
Partnership and Resources						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.124	51.548	51.548	4.124	51.548	51.548
Process						
Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.384	53.835	53.837	3.561	35.610	35.610
2	1.155	11.553	65.389	2.978	29.779	65.389
Competitive Advantages						
Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.316	53.159	53.159	3.600	36.002	36.002
2	1.112	11.117	64.276	2.827	28.274	64.276

The columns of the twiddle factor matrix in Table 3 contained the factor loadings for each item under their respective variables. Factor loadings for all items were divided into factor 1 and factor 2 for each construct, from highest load/weight to lowest load. A commonality score is greater than the cutoff score (0.2) for each item, implying no additional factors (Child, 2006). Table 3 shows the community scores and factor loadings for each item in each component. The commonality score is greater than the





cutoff score (0.2) for each item, meaning no additional factors are meant. (Child,2006). Furthermore, community loads between 40 and 60 are low to moderate (Costello & Osborne, 2005), between 50 and 60 are acceptable (MacCallum, Widaman, Zhang & Hong, 1999), and >0.70 is ideal. is considered. (Beavers et al., 2013).

"Leadership" and "People" and "Strategy" give the same result because the factor contains 10 items (item 1 to item 10) for each variable. Factor 1 formed items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. In contrast, Partnerships and Resources has eight items (items 1 to 8) per variable and one factor. "process" and "competitive advantages" are consisting same results by having ten items and separated into two factors; namely, Factor 1 and Factor 2 in 3 iterations. Finally, the factor loadings are > 0.512 and consider as significantly stable (Hair, Black, Babin, Anderson, & Tatham, 2006; Pituch & Stevens, 2015).

Table-3. Communalities and rotated factor matrix

	Leadership		Factor	
Item No.	Item Statement	Communalities	1	2
L1	Role modeling ethics and values are developed, communicated and implemented at all leadership levels, to support the creation of the organization's culture	0.491	0.797	
L2	Leaders stimulate and encourage empowerment, creation and innovation	0.536	0.790	
L3	Improvement activities are suitably prioritized and managed.	0.617	0.786	
L4	Leaders participate or are involved with professional organization activities, including active involvement at conferences and seminars, particularly promoting and supporting excellence.	0.624	0.732	
L5	Activities that aim to improve the environment and pharmaceutical company's contribution to the local community and the	0.520	0.732	



	wider society are encouraged by leaders, with the view to respecting the rights and interests of future generations.			
L6	Staff are encouraged and supported by leaders to participate in improvement activities, particularly cross-team working	0.535	0.721	
L7	Equality of opportunity and diversity in all aspects of pharmaceutical company's life is actively encouraged and supported by leaders	0.516	0.719	
L8	The resources and investments needed to support change are secured by leaders	0.635	0.714	
L9	The risks associated with change, and the effective delivery of the overall change program are analyzed and managed by leaders	0.487	0.701	
L10	Change plans and the reasons for them are well communicated to staff and other stakeholders by leaders, with opportunity for feedback and input provided.	0.509	0.698	
	People		Factor	
Item No.	Item Statement	Communalities	1	2
P1	Human resource policies, strategies and plans are developed.	0.427	0.829	
P2	Human resource plans and the pharmaceutical company's structure are aligned with the policy and strategy of the pharmaceutical company's, and how this supports the delivery of policy and strategy through a framework of key processes	0.547	0.824	
P3	Staff surveys and other forms of staff feedback are used to inform and improve human resource policies, strategies and plans	0.496	0.800	
P4	Training and development plans are developed and used to help ensure that staff match present and future capability	0.640	0.792	



	needs of the pharmaceutical company.			
P5	People's objectives are reviewed, updated and aligned with pharmaceutical company's objectives and targets.	0.687	0.762	
P6	People are encouraged and supported to be involved in pharmaceutical company's activities through conferences, ceremonies and other activities.	0.521	0.740	
P7	Top-down, bottom-up and horizontal communication channels are developed, used and regularly evaluated.	0.581	0.726	
P8	Best practice and knowledge is identified and shared throughout the pharmaceutical company.	0.627	0.722	
P9	Levels of benefit, such as pension, healthcare, childcare provision for people are determined and agreed	0.679	0.704	
P10	Facilities and services, such as flexible working hours, are determined and agreed.	0.527	0.654	
	Strategy		Factor	
Item No.	Item Statement	Communalities	1	2
S1	The results and outputs from internal performance indicators or measures are used in the development of policies and strategies.	0.620	0.846	
S2	Social, environmental, legal ,economic, demographic and political issues are understood and incorporated in strategy development	0.617	0.814	
S3	The impact of new technologies is understood and analyzed.	0.474	0.787	
S4	Policy and strategy is developed to be consistent with the pharmaceutical company's mission, vision and values, is	0.444	0.785	



	based on the needs and expectations of all stakeholders, takes into account information from a wide range of sources, and is underpinned by the concepts of excellence			
S5	Present and future opportunities for development, or the identification of areas of competitive advantage are identified and fully considered.	0.554	0.755	
S6	The pharmaceutical company's policy and strategy is aligned with that of other strategic partners as necessary.	0.555	0.745	
S7	The relevance and effectiveness of policy and strategy is evaluated, reviewed and updated.	0.716	0.744	
S8	Strategy is communicated and cascaded with all staff, And with other stakeholders, in an appropriate way, with the effectiveness of the communication reviewed and adjusted as necessary.	0.662	0.689	
S9	Plans, objectives and targets are aligned, prioritized, agreed and communicated within the pharmaceutical company, including being embedded into individual objectives as part of an appraisal process.	0.570	0.666	
S10	Awareness within and outside the pharmaceutical company of its' strategy is measured and evaluated.	0.425	0.652	
	Partnership and resource		Factor	
Item No.	Item Statement	Communalities	1	2
PR1	Partnership relationships are structured to create and maximize value for both parties.	0.653	0.808	
PR2	Sharing of knowledge with partners is ensured.	0.527	0.749	



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PR3	Financial strategies and resources are developed and implemented, with financial resources delivered through clearly defined processes, which support pharmaceutical company -wide policy and strategy.	0.546	0.739	
PR4	Innovative and creative thinking within the companies is generated through the use of knowledge resources.	0.560	0.729	
PR5	Partnerships help to generate and support creative and innovative thinking.	0.364	0.726	
PR6	Mutual development and learning is supported through partnership.	0.471	0.687	
PR7	Cultural compatibility and the sharing of knowledge with partners is ensured.	0.532	0.686	
PR8	Information technology is used to support the internal communication and sharing of information and Knowledge between partners.	0.472	0.603	

Item No.	Process Item Statement	Communalities	Factor	
			1	2
Pro1	A robust process management system is established and sed.	0.650	0.831	
Pro2	Systems standards, such as quality management, health and safety, environmental and occupational health,	0.577	0.775	



	are applied in process management			
Pro3	Performance and perception results and information from learning activities are used to help set priorities and targets for improvement, and help to inform improved methods of operation.	0.749	0.769	
Pro4	New process designs, ways of managing pharmaceutical company and the use of new technologies are discovered and applied.	0.638	0.736	
Pro5	Process changes are communicated to internal people, and other stakeholders as necessary.	0.691	0.606	0.454
Pro6	It is ensured that people are trained to operate new or changed processes prior to implementation.	0.666	0.588	0.468
Pro7	It is ensured that process changes actually achieved the desired and predicted results.	0.574		0.842
Pro8	The impact and potential of new technologies is anticipated, understood and utilized in the planning of new products.	0.754		0.813
Pro9	Creativity and innovation is used to develop competitive products, for current established markets, and for gaining access to new markets.	0.565		0.766
Pro10	Creativity, innovation and the skills and competencies of internal staff and partners are used to design and develop competitive products.	0.675	0.517	0.639
	Competitive Advanatages		Factor	
Item No.	Item Statement	Communalities	1	2
CA1	The Jordanian pharmaceutical companies are superior to its competitors in terms of price and quality of products.	0.708	0.833	



CA2	Increase the market share in last three years over competitors.	0.680	0.802	
CA3	Increase annual net profit in the last three years over competitors.	0.652	0.798	
CA4	The Jordanian pharmaceutical companies have the ability to offer high value to customers than competitors.	0.663	0.676	0.442
CA5	The Jordanian pharmaceutical companies reduces the cost of administrative Operations.	0.658	0.633	0.462
CA6	Leadership in the Jordanian pharmaceutical companies give it superiority over its competitors.	0.623	0.626	0.781
CA7	People in the Jordanian pharmaceutical companies give it superiority over its competitors.	0.614		0.781
CA8	Keeping up with update process and use of updating technology over competitors.	0.680	0.329	0.741
CA9	Partnership and resources that used in Jordanian pharmaceutical companies give it superiority over its competitors	0.616		0.701
CA10	Updated strategy used by Jordanian pharmaceutical companies that cope up with environmental change is distinguished favorably from its Competitors.	0.534	0.471	0.664

## 7. Reliability test

Table 4 indicate that the study variables structure consisted of 0.979, where the results ranged Cronbach's alpha values between 0.881 and 0.938 for the reliability coefficient, the study concluded that all study variables consisted of Cronbach's alpha > 0.70, which is It is good and acceptable



Table-4. Test of reliability.

Variables	N of Items	Cronbach's Alpha (N=100)
Leadership	10	0.898
People	10	0.924
Strategy	10	0.938
Partnership and resources	8	0.881
Process	10	0.907
Competitive advantages	10	0.869
Total	58	0.979

## 7. Conclusion and recommendation

In this study, the variables empirically was measured and found them to be within prescribed limits. Analyzing the components with EFA, and found two factors for some variables. All items used were retained based on criteria met. Finally, a reliability analysis was performed and a higher level of realistic internal reliability and consistency was found by representing Cronbach's alpha values above 0.70 for all structures and dimensions. The study recommends reviewing and redesigning current processes, and using the EFQM Enabler can give you a competitive advantage. This helps improve business performance and ensure its viability and continuity. The need to develop, communicate and implement role model ethics and values at all levels of management to support the establishment of organizational culture. Management must realize EFQM, connect it to the organization's strategy, and promote activities aimed at improving the environment and contributing to the pharmaceutical company's community and wider society through leadership. Its purpose is to: Professional organizations, including, in particular, active participation in conferences and seminars, in particular the promotion and support of excellence, an interest in analyzing risks associated with change and effective implementation, and managing a comprehensive leadership turnover program. Participation of worker leaders in activities. Also recommends the necessity of defining and agreeing on levels of entitlement, such as retirement pensions, health care, and child care for people, and





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focusing on the goals of individuals being reviewed, updated, and aligned with the goals and objectives of the pharmaceutical company, as well as the need to identify best practices and knowledge and share them throughout the pharmaceutical company. encouraging and supporting people to participate in the activities of the pharmaceutical company through conferences, celebrations, and other activities. Furthermore, the strategy should be communicated and sequenced with all employees and with other stakeholders in an appropriate manner, with communication effectiveness reviewed and modified as necessary, and attention given to identifying current and future opportunities for development or identifying and fully considering areas of competitive advantage. and try to understand and analyze the impact of new technologies. It is also consistent with the pharmaceutical company's mission, vision and values, is based on the needs and expectations of all stakeholders, considers information from a variety of sources, and implements policies and policies in a supported manner. Finally, the study explores the need for companies to support mutual development and learning through partnerships, and the need to develop and implement strategies and financial resources through well-defined processes that support policy and strategy at the pharmaceutical company level.



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