

**The Impact of Unlimited Improvement on Achieving Competitive Advantage:
A Field Study in Libyan Public Universities**

Najwa Sasi Abd Abdullah¹
Aedah Milood Said Kotara²

Abstract

The study aimed to identify the impact of unlimited improvement (UI) on achieving competitive advantage (CA) in Libyan public universities by a random sample of the academic leaders (Dean, Associate Dean, Heads of Scientific and Administrative Departments) from six public universities. The researcher adopted the analytical descriptive method using a questionnaire specially prepared as a tool for collecting the study data and the collected data were analyzed in SPSS 23 program. The researcher has distributed (320) questionnaires, (295) were retrieved, and only about 281 questionnaires were valid for analysis.

The results of the study showed that there is a significant impact of unlimited improvement in achieving competitive advantage. The study recommends the necessity of employing the principle of the participation of all academic leaders in public universities in the decision-making processes, as well as increasing their empowering to facilitate the completion of the work required on time and at a high quality.

keywords: Unlimited Improvement (UI), Competitive Advantage (CA).

JEL Codes: M1, M3

¹ Lecturer at the Faculty of Economics, Al-Zawia University, Libya, najwasas@yahoo.com

² Faculty of Engineering Technology Zwara, Libya, kotaraaida@yahoo.com

**Rekabet Avantajı Elde Etmede Sınırsız İyileşmenin Etkisi: Libyalı Devlet
Üniversitelerinde Bir Saha Çalışması**

Özet

Çalışma, altı kamu üniversitesinden akademik liderlerin (Dekan, Dekan, bilimsel ve İdari Bölüm Başkanları) tesadüfi seçilmiş bir örneği ile Libya devlet üniversitelerinde rekabet avantajı (CA) elde etmek için sınırsız iyileştirme (UI) etkisini belirlemeyi amaçlamaktadır.

Araştırmacı, çalışma verilerini toplamak için özel olarak hazırlanmış bir anket kullanılarak analitik betimsel yöntemi benimsemiş ve toplanan veriler SPSS 23 programında analiz edilmiştir. Araştırmacı 320 anket formu dağıtmış, 295 adeti geri alınmış ve analiz için sadece yaklaşık 281 anket formu kullanılabilmiştir.

Çalışmanın sonuçları, rekabet avantajı bakımından ulaşmada sınırsız iyileşmenin önemli bir etkisinin olduğunu göstermiştir. Çalışma, tüm akademik liderlerin devlet üniversitelerine karar verme süreçlerine katılım ilkesinin uygulanmasının yanı sıra, zamanında ve yüksek kalitede gerekli olan işin tamamlanmasını kolaylaştırmak için kuruluşların güçlenmesini, geliştirilmelerini önermektedir.

Anahtar kelimeler: Sınırsız iyileştirme (UI), rekabet avantajı (CA).

JEL kodları: M1, M3

1. Introduction

Libya's higher education institutions are currently experiencing many of the challenges and constraints imposed by globalization and increasing technological developments, as well as the increase in global competition and the constant change in consumer behavior and requirements. For these institutions to excel in their field, to maximize their profits and to be at the top of the competitive institutions, they have had to make every effort to adopt new applications, innovative mechanisms, establish their bases in the institutions and apply them professionally and distinctly. As a means of sustaining and enhancing its competitive advantage and improving the level of its services to local and global markets.

TQM and its applications are an important input in achieving competitive advantage by adopting a new improvement tool that draws attention to the problems encountered by TQM and this tool is called unlimited optimization.

The concept of unlimited improvement has become one of the modern



concepts adopted by the management in order to achieve the desired performance, especially in this environment characterized by rapid transformations and modern technologies, which require continuous process as unlimited improvement includes all people, units, tools and applications to ensure customer satisfaction, Increase the profits of the institution, enhance its competitive position, and ensure its survival and continuity. Therefore, the institution should value this concept in a way that achieves a competitive advantage facing its current and potential competitors.

Higher education institutions in Libya face many challenges this is due to the rapid technological development in addition to the information and communications revolution. The political events that have taken place in the region have greatly influenced these institutions, as well as the low level of quality due to the poor quality of the services provided, which was reflected in the outputs. Therefore, these institutions should look for new practices and mechanisms that would Solve this problem, achieve its high competitive advantage both domestic and global, and ensure further development and improvement. In order to survive in the business battlefield, product or service quality has become a critical factor in maintaining a competitive edge, to outperform competitors. This is especially true if institutions in developing countries would like to participate in the international market (Chan, Chu, & Yuen, 2000).

127

Galperin & Lituchy (1999) also suggested that if firms whose cultures are more congruent with the TQM philosophy implement TQM, they will be more likely to improve the quality of their products and services, and therefore be competitive in the global marketplace.

The main problem of this study is about standing on the applications of TQM in the Libyan universities and their impact on the competitive advantage. This study was conducted to identify the impact of unlimited improvement on achieving competitive advantage in Libyan public universities.

2. Theoretical Framework

• Competitive Advantage

As firms are forced to respond efficiently and effectively to a changing business environment, one of the strongest challenges that firms face is



gaining and developing competitive advantage, which may be defined as the extent to which a firm is able to create and maintain a defensible position over its competitors (Tracey, Vonderembse, & Lim, 1999).

Creating a competitive advantage requires a determination of the factors that may put a firm in a better position in relation to its competitors in the marketplace. Four strategic capabilities which can be considered as competing priorities; low cost, differentiation, speed delivery, and flexibility are identified by (Connor, 2003; Wheelwright, 1984). In Porter's research, businesses that did not consciously adopt one of these strategies had no strategic advantage.

According to Porter (1985), competitive advantage can be defined as the advantage an organization has over its competitors. Competitive advantage gives an organization 'the edge' over its rivals and enables it to generate greater value for the organization itself and its shareholders. Over the last few decades, a range of studies has demonstrated that TQM has benefited organizations and given them this 'edge', by improving the quality of products and services, helping to provide superior products to customers, and increasing performance (Hoang, Igel, & Laosirihongthong, 2010). According to Dilek (2017:209-210), competitive power is being better or at least being at the same level according to rival firms while doing business and competing".

128

Unlimited Improvement

According to Korankye (2013) several quality tools and techniques have been employed to achieve this management objective and Total Quality Management (TQM) has proved to be among the most effective quality techniques that have been applied. Empirical studies have shown that the way organizations implement TQM can significantly affect the results and business impact, hence organizations need to take proper measure in implementing TQM in their organizations. For this reason, there is a new tool is an unlimited improvement, has been proposed by (Küçük, 2016b).

Unlimited improvement is a new improvement tool proposed, which draws attention to the problems encountered in TQM implementations, which may affect or limit the success of TQM, and eliminate all limitations encountered in continuous improvement efforts. This tool will make an important contribution to the improvement of organizational performance when it is used as a new improving tool and application. In unlimited



improvement, all the people, phases and practices are targeted to be covered by improvement, removal of all restrictions, elimination of obstacles, thereby expanding the scope of improvement. This may result in the best possible efficiency, effectiveness and quality level (Küçük, 2016b,335).

Unlimited improvement addresses all elements that affect organizational performance in scope and examined among the elements of the scale of the organization. Thus, all people, units, tools and applications are included in the improvement (Küçük, 2011).

The importance of unlimited improvement is mainly due to the problems encountered in TQM implementation and quality improvement only within certain limits and in a limited environment.

The main aim of unlimited improvement is to increase the productivity of the factor to the extent possible by extending the improvement to all the elements, and as a result, to ensure customer satisfaction and profit increase.

Finally, Unlimited improvement is not an alternative to continuous improvement or Kaizen. Unlimited improvement is a new tool that needs to be addressed together with its own perspective and application systematic (Küçük, 2016b,340-346).

129

• **Competitive advantage & TQM applications**

According to Tanninen, Puumalainen, & Sandström(2010), TQM practices can influence organizational performance and competitive advantage through two key processes. The first is via internal performance with an increase in efficiency, reduced waste and a higher return on assets. The second is via higher levels of customer satisfaction which in turn impacts positively on brand value and customer loyalty.

Similarly, according to Summers (2006), TQM practices can: lead to improvements in the quality of products; make better use of resources and reduce costs; and minimize errors and reduced delays which subsequently facilitate an organization to enhance competitive advantage to boost market share. According to Jiménez-Jiménez et al. (2015), TQM practices also have an impact on competitive advantage by facilitating organizational learning and promoting innovation.

A study conducted by Lamptey (2009) and cited by Andoh (2010) revealed that in Ghana, several organizations are underperforming. Most of



these organizations especially service organizations treat customers like beggars, forgetting that in this modern business world customers can make and unmake an organization and so organizations should place quality and its applications at the top of its priority table if they want to attain competitive advantage.

3. Aims of Study

This study aims to explore the impact that Unlimited Improvement (UI) has on achieving Competitive Advantage (CA) within the public Libyan universities, from the perspective of academic leaders.

4. Scope and Method of the Study

Application of the study on the sample from Libyan public universities and the variables which included in the study are unlimited improvement and competitive advantage and the sample of the study is represented by the academic leaders (dean, associate dean, heads of scientific and administrative departments) in the universities are under study.

The researcher used the descriptive analytical method, the questionnaire was used for data collection, analysis and hypothesis testing.

In this study, the questionnaire consists of two parts. The first part contains a general information regarding gender, age, educational level and years of experience. The second part developed to measure the relationship between unlimited improvement and competitive advantage.

Küçük (2016b) scale was used for unlimited improvement (independent variable) and the researcher used the five - point Likert scale in which 1=strongly agree, 5= strongly disagree (Küçük, 2016a: 81-83). The data obtained were analysed in SPSS 23.0 program. Validity and reliability were tested, and regression analysis was performed.

The study population consists of the academic leaders (dean, associate dean, heads of scientific and administrative departments), in Libyan public universities. The number of universities is 6. (320) copies of the questionnaire were distributed to the study sample and (39) copies were excluded because were invalid for the purposes of analysis.



5. Research Model

The model of the study is shown in Figure 1.

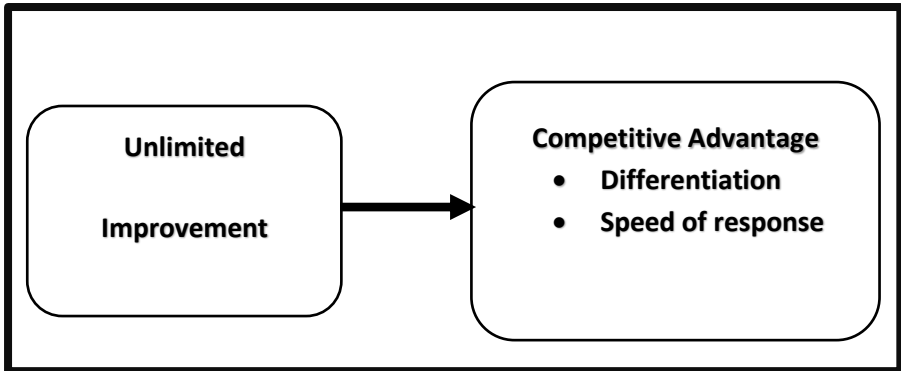


Figure 1. Research Model

As shown in Figure 1, there are two variables in the model. These; unlimited improvement and competitive advantage (differentiation and speed of response). The relationship between these variables is examined.

6. Hypothesis

In reviewing earlier studies, didn't found any research that directly examines the impact of unlimited improvement on competitive advantage.

Benshina (2008) state that there is a significant positive relationship between performance management and unlimited improvement and its components (planning, standardizing, and improving the quality of work, relationship with customer, human resources development and maintenance policy. Küçük (2011), (2016b), and Ay & Nurov (2017) determined that there is a relationship between unlimited improvement and organizational performance.

Experimental results to the study of Powell (1995) indicated that TQM can create competitive advantage. The studies by Anh & Matsui (2006) and Phan et al. (2011) on the Japanese manufacturing enterprises showed that TQM had an influence on competitive advantages in several ways. Abu-doleh (2012) state that TQM practices have significantly affected quality



performance, especially about customer satisfaction, a company's image, employee quality awareness, and employee satisfaction. All TQM efforts will be geared towards increasing the organization's efficiency and effectiveness, thus, increasing quality performance and enhancing the organizational competitiveness level. Based on the literature above, the following hypothesis is formulated:**H1:** There is a statistically significant impact of applying unlimited improvement on achieving competitive advantage.

7. Data Analysis

- Descriptive statistics of demographic variables

This section describes and distributes the individuals involved in the study according to gender, age, years of experience and educational level. The results obtained are displayed in the table below.

Table 1. Distribution Of The Individuals Of The Study

Variable	Category	Frequency	Percentage
Gender	Male	211	75.1%
	Female	70	24.9%
Total		281	100%
Age	Less than30 years old	18	6.4%
	From 30 – 40 years	128	45.65
	From 41 – 50 years	103	36.6%
	Over 50 years old	32	11.4%
Total		281	100%
Experience years	Less than 5 years	102	36.3%
	From 6-10 years	102	36.3%
	From 11-15 years	49	17.4%
	More than 16 years	28	10%
Total		281	100%



Table 1. Distribution Of The Individuals Of The Study (Cont.)

Variable	Category	Frequency	Percentage
Level of education	Higher Diploma	8	2.8%
	Bachelor	35	12.5%
	Masters	157	55.9%
	PhD	81	28.8%
Total		281	100%

From the Table above, we note the following:

133

- Most of the respondents from a male % by 75.1%
- Most respondents are over the age of 30 years
- About a two-thirds (63.7%) of the respondents had more than 6 years of experiences in their universities
- Most (84.7%) of the respondents held postgraduate degrees

- **Measures' Reliability and Validity**

A preliminary analysis consists of reliability tests and factor analyses to establish the quality of information of study variables which are represented by unlimited improvement and competitive advantage.


The statistics related to the exploratory factor analysis which reveal unlimited improvement and competitive advantage factors and factor loads represented by the participants are shown in Tables 2 and 3.



Table 2. Factors Analysis And Findings Related To Unlimited Improvement

Unlimited Improvement (UI)	Factor Loads	Eigen value	variance Explanation rate (%)	Alpha α	Mean	KMO
1. All academic and administrative leadership participate in training	0.797	5.322	66.527	0.928	3.25	0.928
2. All academic and administrative leadership are included in improvement	0.785				3.18	
3. Organizational structure is included in improvement	0.829				3.10	
4. All occupations are included in improvement	0.850				2.96	
5. All tools are included in upgrade	0.803				3.06	
6. All processes are included in improvement	0.828				2.97	
7. All applications are included in upgrade	0.809				2.95	
8. All suppliers are included in improvement	0.821				3.04	





*The Impact of Unlimited Improvement on Achieving Competitive Advantage A
Field Study in Libyan Public Universities
(ss.125-142) N. Abdullah and A. Kotara*

As can be seen from Table 2 since the factor loadings of all expressions are over 0.5, the scales can be considered stable and appropriate for the analysis. The eigenvalues were 5.322 and the eigenvalues greater than 1 indicate that this study is scientifically appropriate and that the scales are valid and reliable. The Cronbach's alpha coefficient was found to be 0.928 between (0,80 and 1) so the scale was highly reliable (Küçük, 2016: 228-232) .

Factors analysis and findings related to competitive advantage showed by Table 3.



Table 3. factors analysis and findings related to competitive advantage

Competitive Advantage (CA)	Factor Loads	Eigen value	variance Explanation rate (%)	Alpha α	Mean	KMO
Differentiation (D)						
1. University is distinguished from other universities with new programs	0.771	3.433	59.001	0.891	2.91	0.898
2. University adopts strict quality assurance specifications and standards	0.772				3.04	
3. University encourages its professors to improve the educational services and services of students	0.673				3.02	
4. University has an annual program to improve the scientific achievement of professors	0.712				2.93	
5. University is collaborating with prestigious universities to improve their quality of education	0.700				3.00	
6. University has a clear direction to get quality awards and differentiation	0.757				2.95	
Speed of Response (SR)						
7. University is characterized by rapidly responding students' needs	0.710				3.11	
8. University is characterized by rapidly responding in time according	0.675				3.11	
9. Over past period, University has responded rapidly to all accreditation requirements	0.741				3.19	
10. I think that university is the most responsive to the demands and needs of faculty members	0.637				3.19	
11. University is characterized by rapidly responding in adopting the latest information technology	0.741	3.09				



*The Impact of Unlimited Improvement on Achieving Competitive Advantage A
Field Study in Libyan Public Universities
(ss.125-142) N. Abdullah and A. Kotara*

12. University has a wide range of scientific activities	0.695				3.12	
--	-------	--	--	--	------	--

As can be seen from Table 3, since the factor loadings of all expressions are over 0.5, the scales can be considered stable and appropriate for the analysis. The eigenvalues were 3,433 and the eigenvalues greater than 1 indicate that this study is scientifically appropriate and that the scales are valid and reliable. The Cronbach's alpha coefficient was found to be 0.89 between (0,80 and 1) so the scale was highly reliable (Küçük, 2016: 228-232).

- Testing hypothesis of the study

Before the simple linear regression analysis, the correlation coefficient was used to describe the association between Unlimited Improvement and Competitive Advantage as shown in table 4.

Table 4. Correlation Of Factors

Variables		1	2	M	S. D
1	Unlimited Improvement	1		3.064	.657
2	Competitive Advantage	.850**	1	3.054	.565
**Correlation is significant at the 0.01 level (2-tailed)					

137

As the correlation matrix highlights Unlimited Improvement were positively and significantly linked to Competitive Advantage. This result may be explained essentially by the fact that applying Unlimited Improvement provide favorable terrain to achieve Competitive Advantage.

Simple Linear Regression was carried out to comprehend the link between the degree of applying unlimited improvement and achieving competitive advantage. The results are summarized in Table 5.

H1: There is a statistically significant impact of applying unlimited improvement on achieving competitive



Table 5. Results Of The Simple Regression Analysis To Test The Impact Of Unlimited Improvement On Competitive Advantage

Variables	B	t-value	Sig
Unlimited Improvement	.850	26.919	0.000

Overall model **F**= 724.650; **p** < 0.001; **R** = 0.850;

R² = 0.722; Adjusted **R**² = 0.721

Independent variable: UI, Dependent variable: CA

Table (5) indicates the results of simple regression for testing the effect of unlimited improvement on competitive advantage. According to the results included in the table above the value of R² expresses the percentage of variation in the dependent variable (competitive advantage) that could be referred to the independent variable (unlimited improvement). Accordingly, unlimited improvement explains a percentage of 72.2 %.

138

The T statistics test the linearity significance of unlimited improvement in relation to the dependent variable. Unlimited improvement showed a significant linearity importance in the prediction model, the magnitude of its effect on the dependent variable reflected from beta (β) coefficient as (0.850) it was statistically significant because the related probability value (sig. T) was ≤ 0.01 .

A significance of this impact is confirmed by the calculated F value (724.650) which is a significant at level ($\alpha \leq 0.01$), this ensures validity of this hypothesis. Since the value is $0.001 < 0.005$, the hypothesis is a significant and accepted (Küçük, 2016a: 245-249).

8. Results

According to research findings; TQM studies and the unlimited improvement practices implemented in this framework are important, and organizations need to benefit even more from unlimited improvement in their



quality improvement activities and practices in people, tools and processes on a regular basis.

The results of this study are summarized as follows:

- * The level of evaluation of competitive advantage in the target universities is moderate (M= 3.054)
- * The level of applying unlimited improvement is moderate (M= 3.064).
- * There is a statistically significant impact of unlimited improvement on achieving competitive advantage at level (0.01).

9. Discussion

The main purpose of this study is to examine the effect of unlimited improvement on achieving competitive advantage in the Libyan public universities. As results are shown in the table (5) validity of this hypothesis which indicates that "There is a significant effect of unlimited improvement on achieving competitive advantage in the Libyan public universities at level ($\alpha \leq 0.01$)".

139

The value of R² expresses the percentage of variation in the dependent variable (competitive advantage) that could be referred to the independent variable (unlimited improvement). Accordingly, unlimited improvement explains a percentage of (72.2 %) of the variance in competitive advantage. The value of calculated F equals (724.650) with the significant F equals (0.000) which is (≤ 0.01). Therefore, unlimited improvement has a significant positive effect on the competitive advantage in the Libyan public universities.

This result is in line with the findings of the study of (Abu-rumman, 2018) which concluded that there was a positive effect in terms of the competitive advantage within the Engineering, Electronics, and IT Industrial Sectors in Amman due to the implementation of TQM practices, and that positive effects were mostly observed in terms of financial results due to increased productivity, quality improvement, a stronger organizational quality culture, reduced wastage, and increased employee satisfaction.

It also agrees with the study of (Munizu, 2013) which showed that total quality management has a qualitative positive effect on both competitive advantage and organizational performance. It also agrees with the study of (AL-Qudah, 2012) which showed that there is the impact of TQM practices on the competitive advantage and that the focus on the customer has had the



greatest impact on the competitive advantage followed by the management of individuals and leadership.

10. Suggestions

Based on the findings of the study, the following suggestions can be made:

* Focusing on the customer (the student) and studying his behaviour, his impressions and his criticisms of the product or service, which constitute a strong opportunity to create and develop new products and services.

* The pursuit of customer satisfaction (the student), because it is the only way to ensure the profitability of the institution, survival, and continuity.

* Universities should design training programmes on TQM and its applications and should be regularly organized for all staff. This will ensure that best practices of TQM are also implemented to sustain the competitive advantage.

* Universities should seek to regularly interact with all customers (student) and other stakeholders, giving them advice, and soliciting feedback on the services which provide by them.

* The principle of the participation of all academic leaders in public universities should be activated in decision-making processes, as well as increasing their empowering to facilitate the completion of the work required on time and at a high quality.

140



*The Impact of Unlimited Improvement on Achieving Competitive Advantage A
Field Study in Libyan Public Universities
(ss.125-142) N. Abdullah and A. Kotara*

References

- Abu-Doleh, J. D. (2012). Human Resource Management And Total Quality Management Linkage – Rhetoric And Reality Evidence From An Empirical Study.
- Abu-Rumman, A. (2018). Tqm And Competitive Advantage : Experiences Within The Engineering , Electronics , And It Industrial Sectors In Amman. *Excellence In Services 21th International Conference*, (December), 0–12.
- Al-Qudah, K. A. M. (2012). The Impact Of Total Quality Management On Competitive Advantage Of Pharmaceutical Manufacturing Companies In Jordan. *Perspectives Of Innovations, Economics & Business*, 12(3), 76–85.
- Anh, P. C., & Matsui, Y. (2006). An Empirical Analysis Of Quality Management Practices In Japanese Manufacturing Companies. *Proceedings Of The 11th Annual Conference Of Asia Pacific Decision Sciences Institute*, 126–137.
- Ay, O., & Nurov, G. (2017). Impact Of Unlimited Improvement On Organization Performance: An Application. *The International New Issues In Social Sciences*, 4(4), 89–95.
- Benshina, K. (2018). The Relationship Between Unlimited Improvement And Business Performance. *Theinternational New Issues In Social Sciences Journal*, 6(1), 85–94.
- Chan, M. Y., Chu, F. W., & Yuen, C. K. (2000). A Successful Tqm Project In China. *International Journal Of Commerce And Management*, 10(2), 75–90.
- Chi, T., Kilduff, P. P. D., & Gargeya, V. B. (2009). Alignment Between Business Environment Characteristics, Competitive Priorities, Supply Chain Structures, And Firm Business Performance. *International Journal Of Productivity And Performance Management*, 58(7), 645–669.
- Connor, T. (2003). Managing For Competitiveness : A Proposed Model For Managerial Focus, 207, 195–207.
- Dilek, S. (2017). Oyun Teorisi Eşliğinde Sanayi Ekonomisi. Seçkin Yayınları. Galperin, B. L., & Lituchy, T. R. (1999). The Implementation Of Total Quality Management In Canada And Mexico : A Case Study, 8, 323–349.
- Hoang, D. T., Igel, B., & Laosirihongthong, T. (2010). Total Quality Management (Tqm) Strategy And Organisational Characteristics : Evidence From A Recent Wto Member. *Total Quality Management*, 21(9), 931–951.
- Jiménez-Jiménez, D., Martínez-Costa, M., Martínez-Lorente, A. R., & Rabeah, H. A. D. (2015). Total Quality Management Performance In Multinational Companies: A Learning Perspective. *The Tqm Journal*, 27(3), 328–340.
- Korankye, A. A. (2013). International Journal Of Asian Social Science Total Quality



*The Impact of Unlimited Improvement on Achieving Competitive Advantage A
Field Study in Libyan Public Universities
(ss.125-142) N. Abdullah and A. Kotara*

- Management (Tqm): A Source Of Competitive Advantage . A Comparative Study Of Manufacturing And Service Firms In Ghana. *International Journal Of Asian Social Science*, 3(6), 1293–1305.
- Küçük, O. (2016a). Scientific Research Methods. Bursa: Ekin Yayınevi.
- Küçük, O. (2016b). TQM, Total Quality Management Efqm Excellence Model Unlimited Improvemen, Seçkin Ed., Ankara.
- Küçük, O. (2011). A New Practice Of Total Quality Management: Unlimited Improvement Abstract, 4(2), 257–268.
- Munizu, M. (2013). The Impact Of Total Quality Management Practices Towards Competitive Advantage And Organizational Performance : Case Of Fishery Industry In South Sulawesi Province Of Indonesia The Impact Of Total Quality Management Practices Towards Competitive Advantage. *Pakistan Journal Of Commerce And Social Sciences*, 7(1), 184–197.
- Phan, A. C., Abdallah, A. B., & Matsui, Y. (2011). Quality Management Practices And Competitive Performance: Empirical Evidence From Japanese Manufacturing Companies. *International Journal Of Production Economics*, 133(2), 518–529.
- Porter, M. E. (1985). Competitive Advantage: Creating And Sustaining Superior Performance. *The Free Press, New York, Ny*.
- Powell, T. C. (1995). Total Quality Management As Competitive Advantage: A Review And Empirical Study. *Strategic Management Journal*, 16(1), 15–37.
- Tanninen, K., Puumalainen, K., & Sandström, J. (2010). The Power Of Tqm : Analysis Of Its Effects On Profitability , Productivity And Customer Satisfaction. *Total Quality Management & Business Excellence*, 21(2), 171–184.
- Tracey, M., Vonderembse, M. A., & Lim, J.-S. (1999). Manufacturing Technology And Strategy Formulation : Keys To Enhancing Competitiveness And Improving Performance. *Journal Of Operations Management*, 17(4), 411–428.
- Wheelwright, S. C. (1984). Manufacturing Strategy: Defining The Missing Link. *Strategic Management Journal*, 5(October 1982), 77–91.

142

