

A Study on the Effect of Quality Management Activities on Business Performance -Focused on Manufacturing Companies in Kazakhstan-

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품질경영활동이 경영성과에 미치는 영향에 관한 연구 -카자흐스탄 제조기업을 대상으로-

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Abstract This paper examined whether quality management(QM) positively impacts Kazakh companies' business performance (financial and non-financial performance). As a result of testing ten hypotheses based on the research model for 287 companies in Almaty, only eight hypotheses were supported. Top management leadership was identified as a critical factor that positively affected financial performance, and customer-centered thinking is strongly related to non-financial performance. Employee participation and quality information analysis factors also positively affected business performance, but their influence was lower than top management leadership and customer-centered thinking factors. Finally, the supplier management factor did not significantly affect business performance, and the two related hypotheses were not supported. These results are presumed to be due to the characteristics of the target companies, such as oil and raw material manufacturing and construction, rather than high-quality finished products.

Keywords : Quality management(QM), Business performance, Customer-centered, Employee participation, Supplier management, Quality Information Analysis

요약 본 연구에서는 품질경영요소(QM)가 카자흐스탄 제조기업의 경영성과(재무성과, 비재무성과)에 미치는 영향을 살펴보았다. 알마티지역 287개 제조기업을 대상으로 연구모형을 이용하여 10개의 가설을 설정·검증한 결과, 8개의 가설만이 지지되었다. 최고경영진 리더십은 재무성과에 긍정적인 영향을 미치는 중요한 요인으로 확인되었으며, 고객중심적 사고는 비재무적 성과에 가장 긍정적인 영향을 끼치는 요인으로 밝혀졌다. 임직원 참여와 품질정보요인도 경영성과에 긍정적인 영향을 미쳤으나, 영향력은 타 품질요인에 비하여 상대적으로 적은 것으로 나타났다. 공급자 관리요인은 경영성과에 유의한 영향을 미치지 않았으며, 관련된 2개의 가설도 지지되지 않았다. 이러한 분석결과는 대상기업들이 고품질의 완제품이 아닌 석유 및 원자재제조, 건설 등의 업체들로 구성된 데에 기인한 것으로 풀이된다.

주제어 : 품질경영, 경영성과, 고객중심적(사고), 임직원 참여, 공급자 관리, 품질정보분석

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1. Introduction

Kazakhstan has achieved an average annual economic growth of over 4% since 2000, and significant macroeconomic indicators have maintained a generally stable trend. However, from the point of view of long-term growth, it is time to achieve qualitative growth by improving productivity. The contribution of Kazakh companies to the growth of productivity is showing a slowdown. Therefore, economic dependence on natural resources such as oil and minerals should be reduced. Instead, there is an urgent need to diversify and upgrade the industrial structure through nurturing mid- and high-tech manufacturing.

The '2050 Strategy', which contains Kazakhstan's economic development strategy, proclaims the expansion of the private economy, fostering high-quality human resources, private economic opening, and institutional innovation to achieve industrial structure diversification and advancement. In particular, Kazakhstan is preparing for the next stage of industrialization through economic policies and strengthening business support activities. Manufacturing companies and SMEs are nurtured as part of the policy to support business activities fully, and a new public-private cooperation model is being promoted[1].

For the development of the national industry, Kazakhstan has set four main goals - ① Increase exports of manufacturing products ② Improve labor productivity ③ Increase fixed investment in manufacturing ④ Reduce energy use. In particular, to improve labor productivity and increase investment in the manufacturing industry, it is urgent to raise manufacturing enterprises' quality systems and levels. The government's goal is to increase the production capacity of domestic enterprises and improve the quality of products made in Kazakhstan to expand exports. It can be said that they are

putting their best effort into creating a new paradigm by breaking away from the existing resource-dependent economy[2].

In the meantime, studies on Kazakhstan have mainly focused on economic cooperation, market-entry environment analysis, foreign direct investment, ethnic and cultural topics, and industry prospects (agriculture, energy, construction, distribution). In addition, some studies[3-5] related to Kazakhstan companies mainly focused on corporate culture, local communication, company entry, etc. On the other hand, according to the Doing Business 2020 of World Bank[6], Kazakhstan ranked 25th out of 190 countries globally, indicating that Kazakhstan's business environment is gradually improving rapidly.

Although there have been studies on the service quality of Kazakh companies, there have been few studies on the quality management activities of companies. With abundant natural resources and cheap labor, Kazakhstan is expected to play a role as a manufacturing base, and quality management can be an essential management standard for business operations. Total quality management (TQM) is one of the popular management methods in many developed countries, while it is an entirely new method for emerging economies. This is because quality management activities are used to measure the level of manufacturing companies and the degree of development[7]. At this point, it is necessary to study quality management activities to break away from the energy and resource-dependent economy and enhance Kazakh companies' competitiveness.

Therefore, this study will analyze whether Kazakh companies' quality management activities have impacted business performance. In addition, we want to check which quality management activities affected business performance through this study.

2. Theoretical Background

2.1 Quality Management and Business Performance

There is insufficient research on Kazakh companies' management culture and system, especially quality management activities. Some Kazakh companies still have centralized solid management activities due to the influence of the former Soviet Union, and improvement of the management system is still needed[8]. Furthermore, since Kazakh companies are experiencing imbalances in the operation of the overall business management system, it is also pointed out that Kazakh business managers need to acquire new knowledge about business management[9]. Therefore, this study is meaningful as an initial study on the relationship between Kazakh companies' quality management activities and performance.

It is generally acknowledged that manufacturing companies need to be quality-oriented in conducting their business to survive the business world. Therefore, quality management is widely used in many sectors[10]. Quality management refers to all activities related to the overall management function to establish quality policies and achieve them in the quality system by detailed elements of quality planning, quality control, quality assurance, and quality improvement. Therefore, quality management should be led by the top management, and the economic point of view should also be considered.

It is an exciting research topic to analyze the hypothesis that quality management activities affect business performance for Kazakh companies. Previous studies have shown that firms with relatively high levels of quality management performed better[11-14]. Furthermore, research results suggest that a company's

performance varies according to the maturity level of quality activities[15,16]. Therefore, based on the reviewed literature, it was confirmed that quality management positively affects business performance.

2.2 Core Variables of QM and Business Performance

According to researchers, activity factors related to QM vary in categories and standards. In this study, input factors of QM activities were divided mainly into the human resource and management aspects. The human resource factor focused on top management(support), customer-centric thinking, and organizational members (participation). Regarding management, our attention was paid to supplier management and quality information management. This point of view also references the quality management level of Kazakh companies and previous studies[17-19].

1) The top management is the person who plays the essential starting point and role in introducing and promoting quality management within the company. The company's level and support of quality management are determined by the CEO's commitment to quality management. There is a strong correlation between the leadership style of top management and the quality work of a company. Top management commitment influences organizational diffusion of quality management via acceptance, routing, and assimilation[20-22]. In Kazakh companies, the awareness and will of top management for quality management is considered necessary.

2) Customer-centric thinking is an issue that any company should focus on. No matter how good the manufacturing quality is, if the customer's quality is not excellent, it will not be easy to be recognized in the market[23,24]. The

other research results show that quality improvement and innovation significantly impact customer behavior[25]. Strong relationships exist between total quality management and customer satisfaction in achieving organizational goals, especially in the current dispensation of globalization and stiff competition[26]. In the Malcolm Baldrige(MB) model, customer and market focus are treated as essential categories. Kazakh companies also recognize the need for customer-oriented business management.

3) Companies that pursue quality management require smooth supply and high quality through close relationships with suppliers. The synergistic effect of quality management and supply chain management has been identified to promote significant organizational benefits[27-29]. The inclusion of supplier quality management in the QM model supports the importance of internal and external integration for quality performance [30]. Although the Kazakhstan government has recently pursued a policy to promote the manufacturing industry, the overall infrastructure, including logistics and distribution, is insufficient. Supplier management is also closely related to quality, so it is a problem for Kazakh companies to solve[1].

4) Active participation of organizational members in creating business performance is an essential factor. Without the participation of organizational members, it is impossible to operate an organization and produce qualitatively excellent final results. Moreover, studies show that the active participation of employees serves as a starting point for continuous improvement and quality improvement[31,32]. On the other hand, there are also research results showing that when a company's quality management system is well operated, it induces the participation of

organizational members[33,34]. Therefore, although there are no prior studies on employee participation in Kazakh companies, this study aims to determine the effect of some level of employee participation on business performance.

5) It is no exaggeration to say that the ability to analyze and utilize quality information determines the level of quality management[35]. Trend identification and decision-making based on quality information can be used to increase work productivity by enabling flexible responses to multiple situations. Furthermore, quality management can create business performance when system quality and quality information are positively linked[36,37]. In particular, the ability to respond to problems by analyzing the calculated quality information quickly and accurately is a crucial measure of corporate competitiveness. If the analysis or interpretation of quality information is not made correctly, it will lose opportunity and waste time[38]. Unfortunately, data on Kazakh companies' quality information analysis and utilization level is insufficient. Still, it is necessary to analyze the impact of this part on business performance as a quality management infrastructure.

6) Business performance through QM was primarily divided into financial performance and non-financial performance. Financial performance includes improved profitability, increased sales, reduced manufacturing costs, and decreased loss. Non-financial performance includes increased customer satisfaction, reduced customer claims, and improved timely yield[19,39].

3. Research Method

3.1 Framework of Analysis

This study examined the relationship between the core categories of quality

management and business performance by establishing a research model based on previous studies. In the quality management category, the characteristics of input factors include 'Top management Leadership(TL),' 'Customer-centered Thinking(CT),' 'Employee Participation(EP),' 'Supplier Management(SM),' 'Quality information Analysis(QA).' The business performance consists of 'Financial Performance (FP)' and 'Non-Financial Performance(NFP).' Furthermore, the hypotheses established a positive (+) relationship between the quality management category and business performance. Fig. 1 shows this relationship as a research model. The categories related to quality system construction, process, and measurement analysis were excluded from the scope of this study because Kazakh companies are relatively weak. Furthermore, if possible, there is another aspect to choosing the same category to compare with prior studies on Vietnam or Egyptian companies.

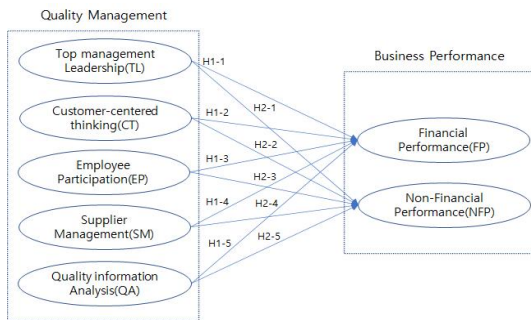


Fig. 1. Proposed research model

3.2 Research Hypothesis

Based on the research model shown in Figure 1, the following ten hypotheses were established that quality management factors affect organizational performance (financial and non-financial), and the rationale is as follows.

1) H1-1: Top management leadership has a positive(+) effect on financial performance.

2) H2-1: Top management leadership has a positive(+) effect on non-financial performance.

All quality management models strongly emphasize the importance of leadership in a company's top management to success in quality improvement and business excellence [40]. Various studies show top management's size and leadership style have a positive and significant effect on financial performance [41,42], and this positive relationship also applies to knowledge-intensive firms. In particular, financial performance was strongly related to companies that pursued quality management [43]. Strategic leadership was found to significantly affect organizational performance (financial & non-financial performance) even in the case of a medium-sized company[44]. According to the research results, non-financial performance mediated the relationship between TQM and financial performance[45]. TQM also has a significant positive link with service organizations' financial and non-financial performance within the higher education sector[46].

3) H1-2: Customer-centered thinking has a positive(+) effect on financial performance.

4) H2-2: Customer-centered thinking has a positive(+) effect on non-financial performance.

In the case of service companies, it is now common knowledge that customer-oriented strategies positively affect the company's financial performance[47]. For the impact of quality management to appear in financial performance, it is easy to understand that it is only possible through customer satisfaction[48].

It is said that customer-centered quality management activities also form a statistically significant relationship by adjusting the

organizational culture for financial performance[49]. In the Malcolm Baldrige Quality Management Model, customer focus is treated as an essential factor. Some studies conclude that a customer-centered quality strategy is related to non-financial performance, but it is difficult to see a direct connection with financial performance[50]. However, financial performance is being pursued through a customer-oriented manufacturing strategy[51,52].

5) H1-3: Employee participation has a positive(+) effect on financial performance.

6) H2-3: Employee participation has a positive(+) effect on non-financial performance.

It is easy to understand that employee participation leads to organizational performance, and in particular, support for employee participation at the organizational level is essential[53]. Employee participation leads to their job commitment, and it can be connected to act as a factor determining the degree of organizational contribution. Employee participation is an arrangement that ensures that employees are allowed to influence management decisions and contribute to improving organizational performance[54]. One study found that employee participation and empowerment programs and self-managing teams have a direct and statistically significant correlation to the managerial perception of the organizational performance[55]. It has been confirmed that the positive effect of employee participation is closely related to job satisfaction and productivity improvement in manufacturing sites[56]. Because employees are the ones who operate quality management and take on the role of problem solvers in the field, their participation is the driving force for organizational performance creation. Therefore, employee involvement and involvement are

considered essential factors in creating organizational performance, and integration can be seen as organizational capability[57].

7) H1-4: Supplier management has a positive(+) effect on financial performance.

8) H2-4: Supplier management has a positive(+) effect on non-financial performance.

From service companies to manufacturing, it can be inferred that efficient supply chain management affects organizational performance and resource procurement strategies. By properly managing the supply chain, productivity increases, cost reduction, and profitability improve, resulting in organizational financial performance[43,58]. Optimal levels of outsourcing ability, SC alignment and integration with IT infrastructure, and SC relationship management are essential to realizing the full financial advantages of effective SCM[59]. Indeed, firms with a strategic purchasing function were more likely to implement a supplier evaluation system[60]. On the other hand, research results show that supplier development and supplier collaboration significantly impact supplier social performance [61]. Therefore, it is estimated that the influence of cooperative relationships with suppliers will be expanded in the future. In the case of Kazakhstan companies, the proportion of energy resource development and export is high, so there is a possibility that the system or research on supply chain management is relatively insufficient.

9) H1-5: Quality information has a positive(+) effect on financial performance.

10) H2-5: Quality information has a positive(+) effect on non-financial performance.

If quality data or information is insufficient, it eventually acts as a factor impairing organizational performance because the time

and effort required to construct correct quality information must be invested[62]. Therefore, it is known that the information management capability of a company plays a vital role from customer management to process management and performance management [63]. According to one study, the effect of IT on financial performance was observed to be more significant for firms that emphasize the higher level of flexibility strategy and the middle level of cost strategy. On the contrary, the effect of IT on performance was observed to be more significant for firms that emphasize a lower level of quality and innovation strategy[64]. In addition, investment in information systems is not necessarily related to the superior financial performance of the firm in the short term. However, investment in information systems is associated with the maturity of information systems, related to improved performance[65]. Another study found that better data quality does not impact sales and operating profit but positively and significantly impacts economic value added(EVA). If product quality improvement and customer satisfaction are pursued through accurate analysis of company quality information, financial performance and corporate image will increase.

3.3 Data Collection and Analysis

In this study, the execution levels of 20 variables in the five categories of quality management and the performance levels of 8 variables in the two sub-categories. Each quality management and business performance were measured using a 5-point Likert scale. The higher the score, the more positive the activities and performance. As shown in Table 1 below, questionnaire items were constructed based on the following references.

Table 1. Questionnaire composition

Questionnaire		Ref.
TL (4)	Recognition of the importance of quality	[21] [22] [39]
	Quality improvement value and vision presentation	
	Employee participation in quality improvement	
	Human/material resource support for quality improvement	
CT (4)	Recognition/understanding of product purchasing customers	[26] [48] [50]
	Efforts to understand customer requirements	
	Recognition of the importance of customer satisfaction	
	Active efforts to improve customer satisfaction	
EP (4)	Efforts to obtain employee opinions	[31] [34] [55]
	Employee participation in quality improvement decisions	
	Actively utilize the opinions of field employees	
	Employee participation in quality and process improvement	
SM (4)	Supplier management to prioritize quality over price	[27] [30] [46]
	Consider the supplier's quality responsibility	
	Consider the supplier's production management capabilities	
	Inducing continuous quality improvement of suppliers	
QA (4)	Active use of quality data	[20] [37] [38]
	Collection of quality information for customer satisfaction	
	Regularly conduct quality evaluation activities	
	Documentation of quality-related procedures & regulations	
NFP (4)	Corporate image improvement	[39] [41] [45] [46]
	Efficiency of work procedures	
	Enhancing customer quality satisfaction	
	Improving product delivery standard yield	
FP (4)	Increase in sales	[45] [46]
	Operating profit increase	
	Manufacturing cost reduction	
	Reduced quality cost	
Sample	Job title, Service Year, Sector, Company Size, etc	-
Sum	33 questionnaire items	-

The survey used in this study was targeted at companies located in Almaty, Kazakhstan. Almaty is the former capital of Kazakhstan, accounting for a quarter of GDP, and is a city where various businesses are concentrated. Data was collected over a relatively long period through a visit survey from September 15, 2019, to March 20, 2020, to increase the response rate, but some companies used fax and e-mail.

A total of 350 copies were distributed to the companies selected as samples, 292 copies were recovered, and 287 copies were used for empirical analysis, excluding five classified as insincere responses. For the companies that responded to the questionnaire, it was not possible to categorize them by industry in detail, but they were classified in a large category.

Table 2 presents the demographics of the sample in this study. Statistical analysis methods and procedures to achieve the purpose of the study are as follows. First, demographic analysis was performed, reliability analysis for each categorical variable and factor analysis was performed for all variables. Next, correlation analysis and multiple regression analysis were performed between the quality management category as an independent variable and financial performance and non-financial performance as a dependent variable. Moreover, the hypothesis was verified using the statistical package SPSS 21.

Table 2. Sample demographics (N=287)

	Rank	Frequency	Ratio(%)
Job Title	Staff	115	40.1
	Manager	97	33.8
	Executives	67	23.3
	CEO	8	2.8
Company Year of Service	5 yrs <	126	43.9
	5-10 yrs	88	30.7
	10-20 yrs	60	20.9
	20 yrs >	13	4.5
Sectors	Manufacturing	178	62.0
	Construction	43	15.0
	Service	38	13.2
	Others	28	9.8
Company Size	50 people <	149	51.9
	51-100 people	50	17.4
	101-200 people	49	17.1
	201 people >	39	13.6

4. Analysis and Findings

4.1 Reliability & Factor Analysis

First, the reliability verification of the questionnaire items for each category was analyzed through the Cronbach's alpha value

and by Factor Analysis. As shown in Table 3, the internal consistency was relatively high as 0.8 or higher, which is suggested to be reliable[66]. Next, Table 4 presents the results of factor analysis in which the questionnaire items are divided into seven factors.

Table 3. Reliability Analysis

Variables	No. of Variables	Cronbach α
Top management Leadership	4 (TL1~TL4)	.978
Customer-centered Thinking	4 (CT1~CT4)	.930
Employee Participation	4 (EP1~EP4)	.979
Supplier Management	4 (SM1~SM4)	.983
Quality information Analysis	4 (QA1~QA4)	.846
Non-Financial Performance	4 (NFP1~NFP4)	.827
Financial Performance	4 (FP1~FP4)	.971

Table 4. Factor Analysis

Factor Variables	F1	F2	F3	F4	F5	F6	F7
TL1	.905	.032	.011	.012	.059	.127	.214
TL2	.921	.008	-.017	.009	.033	.136	.232
TL3	.893	.030	-.027	.055	.005	.107	.249
TL4	.918	.039	.015	.027	.039	.130	.230
CT1	.000	.896	.039	.129	.062	.296	.117
CT2	.049	.909	.045	.097	.098	.262	.146
CT3	.017	.921	.037	.122	.076	.248	.130
CT3	.047	.908	.059	.143	.077	.240	.147
EP1	.029	.016	.948	.075	.061	.067	.065
EP2	-.028	.058	.956	.069	.054	.080	.061
EP3	-.008	.051	.967	.061	.046	.060	.077
EP3	-.003	.038	.964	.038	.029	.091	.066
SM1	.006	.123	.066	.929	.250	.022	.031
SM2	.027	.105	.055	.935	.271	.017	-.006
SM3	.036	.129	.082	.904	.264	.007	-.017
SM4	.035	.108	.068	.931	.276	.022	.014
QA1	.040	.080	.045	.282	.896	.098	.085
QA2	.010	.071	.058	.268	.901	.092	.076
QA3	.037	.071	.018	.254	.898	.107	.112
QA4	.062	.084	.090	.269	.867	.121	.092
NFP1	.147	.293	.074	.027	.133	.882	.201
NFP2	.162	.260	.108	.000	.103	.886	.175
NFP3	.150	.269	.110	.021	.105	.900	.178
NFP4	.138	.341	.079	.028	.120	.825	.154
FP1	.264	.145	.091	-.003	.085	.170	.882
FP2	.279	.126	.050	.013	.110	.162	.888
FP3	.237	.130	.094	.008	.098	.171	.871
FP4	.268	.166	.087	.011	.090	.169	.891
EigenValue	3.69	3.81	3.78	3.79	3.58	3.57	3.58
Variance(%)	13.1	13.6	13.5	13.5	12.8	12.7	12.8
Total variance(%)	13.1	26.7	40.2	53.8	66.6	79.3	92.1

KMO=.901, Bartlett's $\chi^2=13262.163$ ($\rho<.001$)

4.2 Correlation Analysis

As the first analysis step, the results of the correlation analysis between each factor were reviewed, as shown in Table 5. As a result of the correlation analysis, the correlation coefficient is generally low, so the problem of multicollinearity between factors is not considered a concern.

Table 5. Bivariate correlation (N=287)

	TL	CT	EP	SM	QA	NFP	FP
TL	1						
CT	.128*	1					
EP	.024	.126*	1				
SM	.067	.260**	.147*	1			
QA	.116	.230**	.134*	.532**	1		
NFP	.319**	.566**	.194**	.113	.266**	1	
FP	.507**	.330**	.168**	.072	.226**	.429**	1

* p <.05 level, ** p<.01 level

4.3 Hypothesis Test

Table 6 shows the results of multiple regression analyses between quality management and financial performance. The multiple regression model was confirmed to be statistically significant, and the explanatory power of the regression model showed (adjusted) $R^2=.354$. Top management leadership and customer-centered thinking were strongly related to financial performance, followed by quality information analysis and employee participation. On the other hand, the supplier management factor had very little correlation with financial performance and was shown as a negative statistic.

These analysis results are consistent with the industrial reality of Kazakhstan's plan to increase investment in that field because the infrastructure for distribution and logistics is still insufficient in the industrial structure of Kazakhstan.

Table 6. Multiple Regression Analysis Results (FP)

Variable	B	S.E.	β	t	p	VIF
Constant	.383	.297		1.291	.198	
TL	.418	.044	.461	9.583***	.000	1.025
CT	.270	.054	.251	5.023***	.000	1.106
EP	.131	.052	.122	2.532*	.012	1.034
SM	-.140	.061	-.131	-2.301*	.022	1.443
QA	.192	.065	.169	2.974*	.003	1.427

$F=32.408$ ($p<.001$), $R^2=.366$, $adjR^2=.354$, $D-W=2.096$

Dependent Variable: Financial Performance
* $p<.05$, ** $p<.01$, *** $p<.001$

Table 7 presents multiple regression analysis results between quality management and non-financial performance. The multiple regression model was confirmed to be statistically significant, and the explanatory power of the regression model showed (adjusted) $R^2=.414$. Customer-centered thinking and top management leadership factors were most closely related to non-financial performance, quality information analysis, and employee participation. In this analysis, supplier management factors had little relevance to non-financial performance and had no statistical significance.

Table 7. Multiple Regression Analysis Results (NFP)

Variable	B	S.E.	β	t	p	VIF
Constant	.319	.275		1.159	.247	
TL	.211	.040	.239	5.21***	.000	1.025
CT	.542	.050	.517	10.85***	.000	1.106
EP	.126	.048	.121	2.63*	.009	1.034
SM	-.159	.056	-.153	-2.81*	.005	1.443
QA	.204	.060	.185	3.41**	.001	1.427

$F=41.375$ ($p<.001$), $R^2=.424$, $adjR^2=.414$, $D-W=2.049$

Dependent Variable: Non-Financial Performance
* $p<.05$, ** $p<.01$, *** $p<.001$

4.4 Discussion

Based on the results from the analysis, it is demonstrated that quality management activity factors are related to financial and non-financial performance in Kazakh companies. Through the statistical analysis process, eight

hypotheses were accepted among the ten hypotheses established in this study, except for the hypothesis on supplier management. As a result, it was confirmed that quality management activity factors directly affect financial performance and positively affect non-financial performance. This point can be explained that the competitive advantages of QM are reflected in the underlying intangible resources such as top management leadership, customer-centered thinking, and employee participation.

Table 8. Hypothesis test results

Hypotheses		Results
TL → FP	H1-1	accepted
CT → FP	H1-2	accepted
EP → FP	H1-3	accepted
SM → FP	H1-4	rejected
QA → FP	H1-5	accepted
TL → NFP	H2-1	accepted
CT → NFP	H2-2	accepted
EP → NFP	H2-3	accepted
SM → NFP	H2-4	rejected
QA → NFP	H2-5	accepted

In particular, from the standpoint of Kazakhstan companies that want to improve the business environment, the will of the top is more important than anything else, and it is meaningful in that it affects business performance. A noteworthy result is that the influence of customer-centered thinking is more potent than that of top leadership on non-financial performance. It can be seen that the same applies to Kazakhstan companies that non-financial performance improvement of corporate image and customer satisfaction are evaluated by how customer-centric a company is. These results are consistent with the results of previous studies[17,21,39,44,55,67]. Quality information analysis and employee participation factors also affected financial and non-financial performance.

Furthermore, it is worth noting that the explanatory power of the (adjust) R^2 value was higher(.414) when non-financial performance was used as the dependent variable than when financial performance was used(.354) in the regression model. The results of this study can be seen that the respondents perceive that quality management activities are more related to non-financial performance such as customer satisfaction and timely production than numerical financial performance. These results show that Kazakhstan companies' quality management activities act as essential tools to enhance the intangible competitiveness of companies.

However, the results that supplier management activities did not affect financial or non-financial performance were contrary to previous studies[23, 59]. This is another result of prior research on Vietnam and Egypt companies[45, 68]. Therefore, we can guess whether Kazakhstan companies' supply management system or level can not be superior to Vietnam or Egyptian companies. Furthermore, it can be attributed to the relatively weak basis for supply management as most industrial products depend on imports. Therefore, it is speculated that the companies in Altami are not in the form of companies that produce high-quality finished products but are also attributed to the characteristics of companies centered on petroleum products. However, as the importance of supply management is increasing, future research is expected to affect business performance positively. To establish an optimal supply management system, companies need to intensify activities to collect and analyze necessary data. By installing the optimal supply system, logistics costs are reduced, and corporate competitiveness is improved.

5. Conclusion

This study examined the effects of significant quality management factors on business performance in Kazakh companies. As a result of testing ten hypotheses established based on the research model, eight hypotheses were supported, and two hypotheses related to supply management were not supported. The main results of this study are summarized as follows.

First, top management leadership was confirmed to affect business performance positively. In particular, the effect on financial performance was the most significant. Top management's interest and support for quality management are essential factors influencing Kazakh companies' business performance.

Second, customer-oriented thinking strongly affected business performance and was close to non-financial performance. Therefore, it can be understood that customer satisfaction is improved by performing quality management based on customer-centered thinking.

Third, quality information analysis and employee participation factors were also confirmed to affect business performance positively. However, their influence on business performance was less than top management leadership and customer-centered thinking factors.

Finally, supplier management factors were found to have no significant effect on business performance, and the two related hypotheses were not supported. This result shows that supplier management is not a significant predictor of business performance in these Kazakh companies. Therefore, this analysis suggests that more investment and system construction are required for supply management in Kazakh companies. This is because supply management is likely to act as an essential factor in

determining the quality competitiveness of Kazakh companies in the future.

This study has limitations in that the result cannot be generalized to all companies in Kazakh because the number of companies in this study was limited. The survey data were collected using a method designed based on respondents' perceptions, which made it possibly challenging to control response bias. Furthermore, five factors related to quality management were analyzed mainly, but it is necessary to research by considering various related factors in future studies. On the other hand, in this study, the impact on management performance according to the above mentioned quality management activities could not be analyzed. This is because respondents' experiences, company sizes, and industries are diverse. Therefore, it is necessary to analyze the effect of a company's quality management activity level on business performance (financial and non-financial) in future research.

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