



INVESTIGATING THE EFFECT OF TOTAL QUALITY MANAGEMENT AND ITS DIMENSIONS ON THE PERFORMANCE OF MANUFACTURING COMPANIES IN AHVAZ

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ABSTRACT

Today, among the various management practices, total quality management (TQM) is a way to achieve significant results and achievements in the field. Therefore, this model plays an important role in solving complex organizational problems in today's turbulent era. Therefore, the present study examines the effect of TQM and its dimensions on business performance of Ahvaz manufacturing companies. This research is descriptive-causal in terms of type and nature, and applied research in terms of purpose. The statistical population of this research is all active manufacturing companies in industrial towns of Ahvaz, which was selected through Cochran formula of 217 companies and the questionnaire was distributed by simple random sampling method. In this research, we used questionnaires prepared by Moghimi (2011) for TQM variable and Santos-Wijandi (2012) for business performance variable. In this study, SPSS and LISREL were used to analyze the data. Findings of the research indicate that TQM and its dimensions have a positive and significant effect on business performance.

Keywords: Quality; Total Quality Management; Business Performance; Ahvaz Manufacturing Companies.

INTRODUCTION

The world we live in is very complex and has two major features including limited resources and increasingly unlimited need for attention, which has led to productivity. Productivity or improvement in the performance of organizations on performance can support the growth and development program and create opportunities for organizational excellence. In the current global competition market, executives have realized well that physical development does not outstrip competitors on its own, and other factors such as customer satisfaction and performance should also be considered (Pierce, 1997). Since quality of products is one of the important and considerable issues for consumers and the ability of competitors to compete which is rapidly changing in the business environment, manufacturers must strive to produce high-quality products to satisfy their customers and maintain their reputation; so that, nowadays, the high quality has become a strong strategy business. Therefore, considering the importance of quality, organizations have turned to quality management systems and concepts for achieving the desired quality, one of which is the concept of TQM (Seifi et al., 2016).

Total quality management, by determining of customer needs, their motivation through customer satisfaction, prevention of error, and emphasis on the quality of design and continuous improvement aims to provide the conditions in such a way that the organization with the optimal use of material, human resources and information be successful in delivering

the optimal products and services in the best way and gain customers and clients satisfaction. (Motwani, 2001). By using TQM, organizations can measure their success in implementing recovery plans at different times, and compare their performance with other organizations, especially the best ones (Torkfar, 2015).

Today, the concept of TQM is expanded with increasing global competition and, according to Garvin and Minnesota (1988), international competition now requires a higher level of quality for customer satisfaction. Therefore, it can be said that TQM is the philosophy of management that helps organizations in better management in order to achieve the status of world class in the past two decades (Ahmad et al., 2014). Additionally, TQM implies a similar commitment to quality in all areas of an organization that leads to promoting an organizational culture that results in the perceived quality of the customers (Taheri, 2000).

Researchers such as Benner & Tushman (2003) suggested that organizations should try achieve balance in paying attention to quality issues and research, and argued that the existence of quality facilities in an organization is a fundamental requirement to strengthen the organization's resources to achieve a higher degree of productivity and efficiency. Considering the importance of quality in organizations and the increasing attention it has paid to today's organizations, various ways and means to achieve it have been offered and proposed. Today, TQM will have the ability to control the services and products, and even the sales process, according to a comprehensive view of the organization's issues (Arumugam & Mojtahedzadeh, 2011). In addition, TQM has been tested and approved several times by various researchers on the performance of the organization. Many of the empirical studies that have examined the relationship between TQM and performance have not shown the same pattern. Instead, some studies have shown that the effective use of software TQM activities improves organizational performance. Some have also shown that the increase in performance is the result of the use of TQM hardware activities (Motwani et al., 1994). Studies on identifying the effects of marketing strategy on the performance of organizations have been well-suited for linking quality and performance of the supporting organization.

However, there are not enough reasons to believe that there is a well-defined connection between the wide-ranging structures of quality management and the organization's performance. While the importance of quality is widely recognized, the lack of empirical evidence regarding the establishment and impact of quality management systems has led to criticisms about the quality-based application of performance.

Now considering the importance of TQM, the present research seeks to answer this question that whether the variable of TQM and its dimensions have a significant effect on the commercial performance of manufacturing companies in Ahvaz?

Theoretical basis of research

The rapid growth of technology and the diversification of products in a highly competitive environment, as well as dramatic changes in management theories, along with natural resource constraints, have led to problems in the use of human resources, managers of public and private organization, large and small organizations, manufacturing and service providers to seek appropriate solutions in order to solve problems and survive and be able to adapt themselves to changes provide the context for maintaining and development of their activities.

Therefore, in this situation, one of the tools to create a dynamic and targeted organization that can maintain its sustainability and competitive nature in such a highly risky environment is to



incorporate new management patterns, in particular, TQM (Ghorji, 2005). Currently, the method of TQM and its relationship with the performance of companies has been studied by various researchers in various industries. The relationship between the leadership style of top executives and their performance in related research literature has often been identified (Powell, 1995). Many studies have noted that there is a positive and significant relationship between resource management and components of TQM and organizational performance. In addition, studies on quality management systems show the contradictory results of the success and failure of deployment projects and their impact on organizational performance improvement. In other words, some studies have shown that the failure to establish quality management systems has proven to be unsuccessful, and some have shown the failure and breakdown of these systems in different organizations (Sushma, 2005). The emergence of TQM is one of the most important aspects of management performance. TQM is based on the assumption that people are hardworking and they want to make the most effort in doing their job (Shabani and Hosseini, 2016). The development of TQM as a management method began in the early nineteenth century. Several scientists have contributed to the development and implementation of this method. Although, in the beginning it did not receive much attention, but since the early 1980s, due to the success of the Japanese in the application of this method with the help of Dr. Deming, it has been praised considerably (Kaynak, 2003).

The principles of TQM by Eduard Deming is proposed only for large and profit organizations. But the fact is that TQM is applied in any organization such as universities, educational organizations, and service organizations and so on. (Jerry, 1994). Santos Vijhande and Alvarez Gonzalez (2007) explored the relationship between TQM and business performance. The purpose of this research was to develop a tool for measuring the consequences of a TQM based on the European Foundation for Quality Management Excellence Model and providing empirical evidence for the relationship between management practices and business performance dimensions in the model. The statistical population of this study was Spain's manufacturing and service companies. The results of this study showed that there is a meaningful relationship between TQM and business performance. Raja et al. (2011) explored the impact of TQM practices on the business performance of Pakistan's manufacturing companies. The studied sample consisted of 65 managers in the quality assessment department of these manufacturing companies. The results of this research showed that TQM is effective on the business performance of these companies. Yoll Hassan et al. (2012) investigated the relationship between quality management and performance practices, namely, quality performance, business, and organization.

Quantitative data was obtained through 171 quality managers of Pakistan's manufacturing industry. The findings of this research show that TQM is effective on business performance. Furthermore, Mashagba (2014) investigated the quality management and its effects on the effectiveness of scientific performance. The results of this research showed that TQM has a positive effect on performance effectiveness. Nekozaadeh and Esmaili (2013) studied the impact of TQM practices on the performance of Iranian telecommunication companies. The results of this research showed that there is a strong and positive relationship between the methods of TQM and quality performance, innovative performance and organizational performance. Kazemi et al. (2013) investigated the impact of applying TQM on the performance of organizations, particularly in entrepreneurial organizations. The conducted studies showed



that by incorporating and implementing the principles of TQM in organizations and especially entrepreneurial organizations, the organization's performance can be greatly improved. Akbari et al. (2013) investigated the impact of TQM and organizational learning on innovative performance at Iran Darou Company. The statistical population of this study was 210 employees of Iran-Darou Company, among which 136 were selected as samples. The results of this research showed that there is a significant relationship between TQM and innovative performance. Baharestan et al. (2012) conducted a research aimed at analyzing the impact of information technology and TQM on the performance of the organization. The statistical population of this research consisted of 368 employees of West Regional Electricity Distribution Company of Kermanshah Province, among which 188 were selected as samples. The results of this research showed that TQM has a positive and significant relationship with organizational performance. In the end, it can be said that in the field of research subject, it is not possible to study the impact of TQM and its dimensions separately on the commercial performance of manufacturing companies in Ahvaz. Therefore, the present study tries to investigate the effect of TQM and its dimensions on business performance in a clear and coherent model.

RESEARCH METHODOLOGY

The purpose of this study was to investigate the effect of TQM and its dimensions on the commercial performance of Ahvaz manufacturing companies. This is an applied, descriptive-scientific research. Regarding the subject's specialty, the questionnaire method has been used; therefore, Moghimi questionnaire was used for measuring the TQM and Santos-Wijandi questionnaire was used for measuring the business performance dimensions. The library method was also used to collect and compile literature on the subject and to study the research records. The statistical population of this research is 500 active companies in Ahvaz industrial towns which according to the Cochran formula, 217 manufacturing companies were selected and the questionnaire was randomly distributed among them. Content validity was then used to determine the validity of the questionnaires. for determining the reliability of the questionnaires, Cronbach's alpha coefficient was used.

Table 1: Results of Cronbach Alpha Coefficient

Row	Variable name	Number of lumps	Cronbach Alpha
1	TQM	30	722
2	Focus on customer (customer ...)	6	717
3	Empowering the employees and group work	5	719
4	The results of the quality improvement and efficiency	4	720
5	Quality measuring and analyzing	8	900
6	Identification and education of employees	5	756
7	Business performance	3	715
8	Total variables	33	821

As it can be seen in the table above, comprehensive reliability is 0.821, which indicates that the questionnaire has the necessary reliability. Descriptive statistics and inferential statistics were

used to analyze the data. In the descriptive statistics of the research, the research variables such as mean, median, standard deviation were investigated. The structural equation model was also used for SPSS and LISREL to verify and confirm the hypothesis as well as to examine the conceptual model of the research.

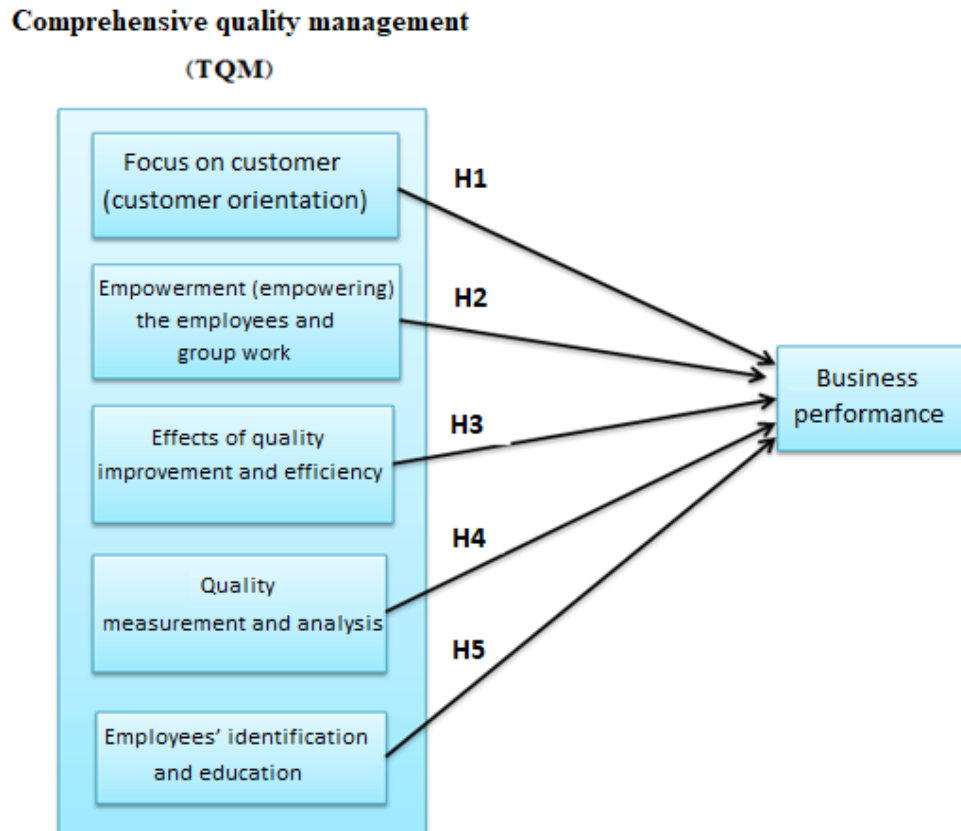


Figure 1: research conceptual model with quotation from Ahmad and colleagues (2014)

Research hypotheses

Major Hypothesis

Total quality management has a positive and significant effect on business performance.

Minor Hypotheses

1. Minor Hypothesis 1: Customer focus (customer orientation) has a positive and significant effect on business performance.
2. Minor Hypothesis 2: Empowerment (empowerment) of staff and teamwork has a positive and significant effect on business performance.
3. Minor Hypothesis 3: The consequences of improving quality and productivity on business performance have a positive and significant effect.
4. Minor Hypothesis 4: Measurement and quality analysis has a positive and significant effect on business performance.

5. Minor Hypothesis 5. Identification and education of employees has a positive and significant effect on business performance.

RESEARCH FINDINGS

In the descriptive analysis of the data, demographic characteristics of respondents including age, gender, educational level and service record were studied and the results of the study showed that all subjects are male. Additionally, 43.8% of the samples (95 people) had a bachelor's degree in terms of education, which is the highest percentage of the sample group. The survey of respondents' age status also showed that 65.9% were between the ages of 41 and 50, which is the highest percentage of the sample group. And finally, the respondents' service record shows that 48.8 percent (106) have a career record of 16 to 20 which is the highest percentage.

Descriptive status of the research variables

Table 2:

Variable	Mean	Standard deviation
Total quality management	3.2157	76938
Business performance	3.2005	1.10639

According to table (2), the TQM variable with an average of 1, 2, and 3 has the highest average among the respondents than business performance.

Table 3: descriptive status of quality management parameters

Quality management parameters	Mean	Standard deviation
Focus on customer	3.2408	1.09419
Empowering employees and group work	3.2523	1.09502
Effects of quality improvement and analysis	3.1920	1.04157
Quality measurement and analysis	3.2581	1.03983
Variance of employees identification and education	3.1352	1.06340

According to the table (3), empowering employees and teamwork, and measurement and quality analysis indices with averages of 3.25, have the highest average among the indicators of TQM.

Testing the Normality of Data

To evaluate the normality of the data, the variables of the questionnaire are used. In this test, we seek to prove one of the following assumptions.

Table 4: tilting and skewness of research questions

Research questions	Tilting	Skewness	Research questions	Tilting	skewness
M1	-661	-227	A1	-722	-182
M2	-614	-293	A2	-591	-279
M3	-789	-202	A3	-527	-381
M4	-876	-103	A4	-537	-316
M5	-540	-435	A5	-595	-388
M6	-545	-289	A6	-642	-369

T1	-799	-185	A7	-575	-426
T2	-655	-376	A8	-679	-338
T3	-481	-135	AM1	-708	-151
T4	-706	-267	AM2	-690	-290
T5	-593	-275	AM3	-676	-592
BK1	-608	-353	AM4	-678	-453
BK2	-290	-344	AM5	-668	-428
BK3	-454	-246	AM6	-289	-497
BK4	-578	-119	AM7	-523	-323

As it is shown in table, the skewness of the data is between 2 and -2. Therefore, there is no reason to reject the null hypothesis based on the normalization of the data.

Reviewing the status of the total quality management in the studied community

In this study, the One Sample T test was used to examine the quality of total management.

Table 5: average test of comprehensive quality management population

Option	Mean	Standard deviation	Mean standard error
TQM	3.2157	76938	05223

Table 6: T-test of TQM samples

	Test value (=3)					
	T	Degree of freedom	Level of meaningfulness	Average variation	Confidence interval 95%	
					Low Limit	High limit
TQM	4.129	216	000	21567	1127	3186



Regarding the table above, the value of the meaningful level whose value is zero is less than the error level of 0.05; so, the zero assumption based on that the average weights of the total quality management of the respondents are equal to 3, is not confirmed. Therefore, it can be said that in terms of total quality management, the studied population is moderate in relation to the average of society (3.21). Additionally, considering both the upper and lower limits are positive, this indicates that it is moving and progressing in the favorable way.

Reviewing the status of business performance in the studied society

In this study, the mean of one sample test was used to examine the status of the performance.

Table 7: average test of a business performance population

Option	Mean	Standard deviation	Standard error of mean
Business performance	3.2005	1.10639	07511

Table 8: T-test of a business performance sample

Option	Test value (=3)					
	T statistics	Degree of freedom	Level of meaningfulness	Average of difference	Confidence interval 95%	
					Low limit	High limit
Business	2.669	216	008	20046	0542	3485

performance						
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As it can be seen, the value of the meaningful level whose value is zero is less than the error level of 0.05, so the zero assumption that the average weight of the business performance scores of respondents is equal to 3 is not confirmed. Furthermore, the rate of commercial performance of the studied society is moderate in relation to the average of society (3.20). Therefore, considering that both the upper and lower limits are positive, it can be concluded that it is moving and progressing in the desirable way.

Review the status of components of TQM in the studied population

In this study, the average of one sample test was used to examine the status of components of TQM.

Table 9: mean test of TQM components population

Option	Mean	Standard deviation	Average
Focus on customer	3.2048	1.09409	07428
Empowering the employees and group work	3.1786	1.02519	06959
Effects of quality improvement and efficiency	3.1920	1.04157	07071
Quality measurement and analysis	3.2581	1.03983	07059
Employees identification and education	3.1352	1.06340	07219

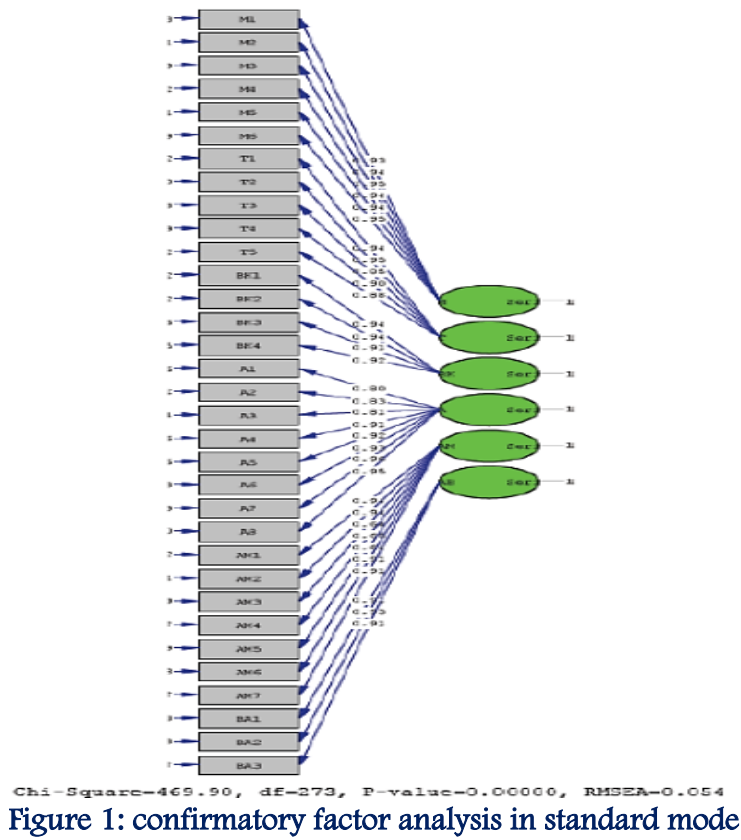
Table 10: T-test of TQM components sample

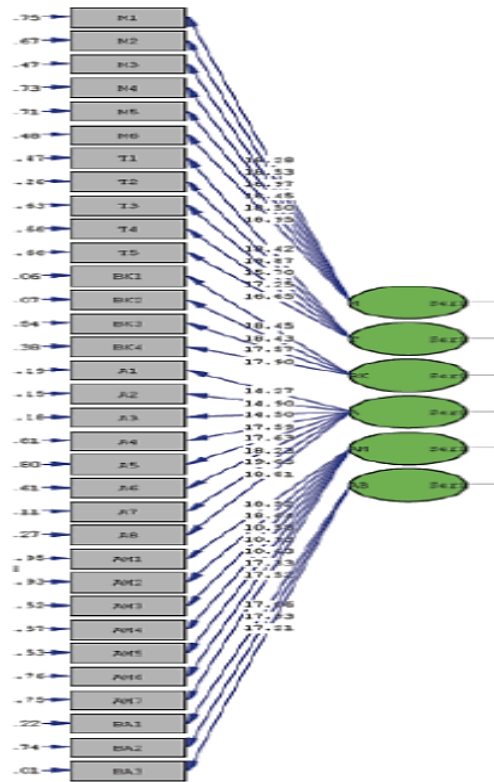
	Test value (=3)					
	T statistics	Degree of freedom	Level of meaningfulness	Mean variation	Confidence interval 95%	
					Low limit	High limit
Focus on customer	3.242	216	001	24.78	0944	3872
Empowering the employees and group work	2.566	216	011	17857	0414	3157
Effects of quality improvement and efficiency	2.716	216	007	19201	0526	3314
Employees identification and education	1.873	216	062	13518	0071	2775

According to the table (10), the value of the meaningful level whose value is zero is less than the error level of 0.05, so the zero assumption that the average weights of the components of TQM of the respondents are equal to 3 is not confirmed. Therefore, considering the results of the table (10), it can be said that in terms of the components of TQM of the studied society, the average of the society is in a moderate situation, also considering that both the upper and lower limits are positive, this indicates that it is moving towards the desirable in motion and progress.

Confirmatory Factor Analysis

In this research, confirmatory factor analysis was used to evaluate the suitability of selected questions for measuring the studied variables.





Chi-Square=469.90, df=273, P-value=0.00000, RMSEA=0.054

Figure 2: confirmatory factor analysis in t-value mode

As it can be seen, the rate for all observed variables is significant. Therefore, in general, it can be stated that all the considered factors are approved. Furthermore, in this research, the GOF criterion for the fitting of the general model is 0.07 and less than 0.1, which indicates the strong fit of the model.

Testing research hypotheses

After verifying the factor construction of the research structures, a path analysis model has been used to test the variables. The results of the analysis are presented in Table 11.

Table 11: Results of Research Minor Hypotheses

Research hypotheses	Relation of research variables	Factor load	T statistics	Results
Major hypothesis: the total quality management has a positive and significant effect on business performance.	Comprehensive quality management – business performance	0.96	50.56	Confirmed
Minor hypothesis 1: focusing on customer (customer orientation) has a positive and significant effect on business performance.	Focusing on customer (customer orientation) – business performance	33.0	41.3	Confirmed
Minor hypothesis 2: empowering (empowerment) employees and group work has a positive and	Empowering (empowerment) of employees and group work – business performance	0.0	36.2	Confirmed

significant effect on business performance.				
Minor hypothesis 3: the effects of quality improvement and efficiency have a positive and significant effect on business performance.	Quality improvement effects and efficiency – business performance	0.33	36.6	Confirmed
Minor hypothesis 4: quality measurement and analysis has a positive and significant effect on business performance.	Quality measurement and analysis – business performance	0.06	95.6	Confirmed
Minor hypothesis 5: Employees identification and education has a positive and significant effect on business performance.	Employees identification and education – business performance	33.0	69.2	confirmed

DISCUSSION AND CONCLUSION

In this study, considering that the standard load ratio between two variables of total quality management on business performance is 96%, a significant value is also obtained as 50.56, which is greater than 1.96. Therefore, with 95% confidence, the total quality management has an impact on business performance. Therefore, it can be said that total quality management has a positive and significant effect on business performance; that is, with improved comprehensive quality management, business performance also improves, and therefore, the main hypothesis of the research is confirmed. The results of this hypothesis are consistent with the studies by Raja et al. (2011) and Hugh Arang and Chen (2002). In current research, the standard factor load is obtained between two focus variables on customer (customer orientation) and commercial performance of 0.33. Additionally, a significant amount was obtained as 3.41, which is greater than 1.96. So, with 95% confidence, focusing on customer (customer orientation) affects business performance. Therefore, it can be said that the focus on the customer (customer orientation) has a positive and significant effect on business performance; that is to say, by improving the focus on the customer (customer orientation), business performance also improves, and thus the first hypothesis of the research is confirmed. The results of this hypothesis are consistent with those of Raja et al. (2011). In this research, considering that the standard factor load between two variables of empowerment of employees and teamwork on business performance is 0.25. Furthermore, a significant value of 2.36 is obtained, which is greater than 1.96. Therefore, with 95% confidence, empowerment of employees and teamwork affects business performance. Therefore, empowerment of staff and teamwork has a positive and significant effect on business performance; that is, by improving the empowerment of employees and teamwork business performance improve, and therefore the second hypothesis of the research is confirmed. The results of this hypothesis are consistent with the studies of Tarazovsky and Samson (1999). Furthermore, the standard factor load between the two variables is the result of improving the quality and productivity and commercial performance of 0.26. A significant value of 6.36 is obtained, which is greater than 1.96. Therefore, with 95% confidence, the effects of improving quality and productivity on business performance are confirmed. Therefore, it can be said that the effects of improving quality and productivity on business performance have a positive and significant effect; that is,



improving the quality and productivity effects will improve business performance, and therefore the third hypothesis of the research has been confirmed.

The results of this hypothesis are in accordance with the studies by Santos Vijondha and Alvarez Gonzalez (2007). In this study, the standard factor load is obtained between the two variables of measurement and the analysis of quality and business performance of 0.06. Furthermore, a significant value of 6.95 is achieved, which is greater than 1.96. Therefore, with 95% accuracy, measurement and analysis of quality affects business performance. The effect of measuring and analyzing quality on business performance is positive and significant; in the other words, improving the measurement and quality analysis also improves the business performance, and the fourth hypothesis of the research is confirmed. The results of this hypothesis are consistent with the studies by Hyewang and Chen (2002). Finally, the standard factor load between the two variables is identification and education of the employees and the commercial performance of 0.11. A significant value is obtained at 2.69, which is greater than 1.96. Therefore, with 95% confidence, employee identification and education affects business performance. In this sense, with improving the identification and education of employees, business performance is also improving, and therefore the fifth minor hypothesis of the research is confirmed. The results of this hypothesis confirmation are consistent with the studies by Yol Hassan et al. (2012). In this research, regarding the results and importance of customer orientation in the field of profitability and income for manufacturing companies, it is suggested that by measures such as using various innovative and effective methods to get feedback from customers for all organizational functions, the use of effective systems for Getting feedback from all customers for the core functions of the organization, determining and identifying customers' needs through an organized and systematic approach and dealing with petitions and customer complaints provide the context for achieving and improving business performance. Further, given the positive and significant effect of empowering employees on business performance, it is suggested that managers support team empowerment and teamwork, give them the necessary working groups to establish quality improvement teams. Additionally, delegation of authority to employees and also involving them in making suggestions promotes the improving and controlling the affairs in the organization by employees themselves. In this study, the effect of measurement and quality analysis on business performance has also been confirmed; this conclusion suggests that companies with high business performance have a robust quality measurement and analysis system.

Therefore, in this context, a system for measuring and analyzing the quality and collecting information about the quality and timing of both domestic and foreign customers and suppliers can lead to improved business performance. Additionally, the research results show the effect of employee identification and education on business performance in Ahvaz manufacturing companies.

Therefore, considering the importance of identifying and educating employees in promoting business performance, it is suggested that manufacturing companies pay attention to their educational systems and consider their educational needs and organize education courses in accordance with the field of work and education; because with the presence of knowledgeable and capable staff, education related to the work that they do, and the existence of education courses and increasing the skills and knowledge of the staff, leads to the increase in business performance.



References

- Ahmad, M. F; Zakuan, N; Jusoh, A; Yusof, S. M; Takala, J. (2014). Moderating Effect of Asean Free Trade Agreement between Total Quality Management and Business Performance. *Procedia-Social and Behavioral Sciences*, 129:244-249.
- Akbari, P; Baharestan, A; Nasr Esfahani, A. (2013). Total quality management and innovative performancne (A case study: Iran Daru Company). *Journal of Industrial Management*, 8(23).
- Arumugam, V. C; Mojtahedzadeh, R. (2011). Critical success factors of total quality management and their impact on performance of Iranian automotive industry: a theoretical approach. *European Journal of Economics, Finance and Administrative Sciences* ISSN 2275-1450 Issue, 33.
- Baharestan, A; Akbari, P. Shaemi Barzaki, A. (2012). Analyzing the effect of IT and TQM on organization performance. *Quarterly Journal of Information and Communication Technology in Educational Sciences*. 3(2): 47-68.
- Ghorji, M. (2005). TQM in insurance industry of Iran based on SERVQUAL model. 5(36).
- Huarng, Fp; Chen, Y. T. (2002). Relationships of TQM philosophy, methods and performance: a survey in Taiwan. *Industrial Management & Data Systems*, 102(4) -234-226.
- Jerry John, H. (1994). Planning change and reconstruction in education management. Translation: A. Alaghehband (2005/1384). Tehran: Arasbaran.
- Kaynak, Hale(2003). The relation ship between total quality management practices and their effects on firm performance. *Journal of oprations management*. Pp 405-435.
- Kazemi, M., Rahimnia, F., Abavi Torgabe, S. (2013). Analyzing the effect of quality management on the performance of entrepreneur organizations. 2nd National Conference on Management and Entrepreneurship. Iran: Khansar.
- Mashagba, I. A. S. (2014). The Impact Of Total Quality Management (TQM) On The Efficiency Of Academic Performance-Empirical Study-The Higher Education Sector-The University Of Jordan. *International Journal Of Scientific & Technology Research* :3, Issue 3.
- Moghimi, M., Emami, F., Kazemi, M. (2011). Evaluating and prioritizing social capital indexes and its effect on the organizational performance in university system. *Journal of Organizational Culture Management*. 9(2): 29-60.
- Motwani, J.G; Mahmoud, E; Rice, G. (1994). Quality practices of Indian organizations: An empirical analysis .*International Journal of Quality and Reliability Management*,11-38-52.
- Pierce, J.(1997). "Efficiency Progress in the New South Wales Government"; The International Conference on Public Sector Efficiency, University of New South Wales, 27 and 28November.
- Powell, T.C.(1995). Total quality management as competitive advantage: a review and empirical study .*Strategic Management Journal*,37-16:5.



- Raja, M. W; Bodla, M. A; Malik, S. A. (2011). Evaluating the effect of total quality management practices on business performance: A study of manufacturing firms of Pakistan. *International Journal of Business and Social Science*, 2(9):110.
- Santos-Vijande, M. L; Alvarez-Gonzalez, L. I. (2007). TQM and firms performance: An EFQM excellence model research based survey. *International Journal of Business Science and Applied Management*, 2(2): 41-21.
- Seifi, A., Bodaghi Khajeh Nobar, H. (2016). Analyzing relationship based on timely production and financial performance of car companies listed in Stock Exchange. *Biannual Journal of Value Chain Management*. 1(1).
- Shabani, H., Hosseini, M.R. (2016). Analyzing the relationship between TQM and quality of services in insurance agencies in Ghorghan. *International Conference on New Management in 1404 Horizon*. Tehran: Islamic Azad University, East Tehran Branch.
- Sushma K.(2005). Graph theory and matrix approach for performance evaluation of TQM in Indian industries; *The TQM Magazine*, 17: 6.
- Taheri, Sh. (2000). *Pervasive quality management and ISO-9000 series*. Tehran: Olum Novin.
- Terziovski, M; Samson, D. (1999). The link between total quality management practice and organisational performance. *International Journal of Quality & Reliability Management*, 16(3): 237-226.
- Torkfar, A. (2015). Barriers to establishment of TQM system in sport associations of Bushehr Province. *New Approached to Sport Management*. 3(8): pp. 41-48.
- Yoll Hassan, M; Mukhtar, A; Qureshi, S. U; Sharif, S. (2012). Impact of TQM Practices on Firm's Performance of Pakistan's Manufacturing Organizations. *International Journal of Academic Research in Business and Social Sciences*,2(10):250-232.

