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**Article**

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Amfiteatru Economic Journal

**Provided in Cooperation with:**

The Bucharest University of Economic Studies

Suggested Citation: Busu, Cristian; Busu, Mihail (2017) : The impact of applying the total quality management model on the performance of the telecom organizations in Romania, Amfiteatru Economic Journal, ISSN 2247-9104, The Bucharest University of Economic Studies, Bucharest, Vol. 19, Iss. Special Issue No. 11, pp. 1035-1049

This Version is available at:

<http://hdl.handle.net/10419/196407>

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## THE IMPACT OF APPLYING THE TOTAL QUALITY MANAGEMENT MODEL ON THE PERFORMANCE OF THE TELECOM ORGANIZATIONS IN ROMANIA

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<p><b>Please cite this article as:</b> Busu, C. and Busu, M., 2017. The Impact of Applying the Total Quality Management Model on the Performance of the Telecom Organizations in Romania. <i>Amfiteatru Economic</i>, 19(Special No. 11), pp. 1035-1049.</p>	<p><b>Article History</b> Received: 28 July 2017 Revised: 29 August 2017 Accepted: 25 September 2017</p>
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### Abstract

The present paper brings into discussion Edwards Deming's conceptualized model of Total Quality Management highlighting different phases within its evolution as it is seen in the economic literature. A temporal incursion allows a better understanding of the way quality standards implemented by means of total quality management programs are reflected in final consumer's satisfaction as well as in organizations' long-term performance.

Conceptual development of the model is intertwined with the pragmatic side, by presenting a case study of the mobile telecommunication sector in Romania. The quantitative research analyzes the influence of total quality management's (TQM) implementation in achieving the competitive advantage and the performance of enterprises in the telecom sector. Data were collected by means of a survey through a questionnaire addressed to the respondents and the hypotheses of structural equation modeling (SEM) were tested by partial least squares path modeling (PLS). Data analysis was conducted by means of the statistical software SmartPLS 2.0 M3 software.

The research conclusions confirm the theoretical issues presented throughout the paper, emphasizing the fact that enterprises' performance is the direct result of the collaboration between a series of factors such as the motivated workforce, decisional power quality as well as operational process integrity.

**Keywords:** total quality management, economic performance, final consumer's satisfaction, telecommunications, motivated workforce, integrated processes, quality of management.

**JEL Classification:** C35, O32, L22.

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## **Introduction**

The forerunners of Total Quality Management theory were Edwards Deming and Walter Shewhart. In the first decades of the last century, Deming (1986) used to apply the probabilistic model developed by Shewart in the managerial process in order to control statistically the production and thus, to give the management the opportunity to intervene optimally. The so-called "Deming method" was firstly utilized in 1947, in Japan, at the level of production within factories where the programs of quality statistical control offered managers the necessary intervention methods designed for industrial processes. Deming's disciple, Kaori Ishikawa, applied total quality control concept at the level of the Japanese economy, this concept involving all the employees of the organization, regardless of their position. Ishikawa created one of the total quality management tools, respectively the cause-effect diagram, known nowadays as "Ishikawa diagram". Moreover he developed the concept of "quality control circles". This concept reveals a group of employees which, voluntarily, identify and find real solutions for work-related problems.

This paper envisages validating the relation of causality between economic performance and TQM model, through the analysis of the data collected from the Romanian mobile telecommunications sector. As such, the casual relation between the economic performance and TQM model is evaluated based on equations of structural modeling, tested through the method of the ordinal least squares (OLS).

## **1. Literature review**

In 1951, Armand Feigenbaum developed the Deming model of Total Quality Control by creating a synapse between suppliers and customers, supporting employees' involvement in achieving performant results in order to satisfy customers' needs. Another economist, this time one of a Romanian origin, Joseph M. Juran, born in Romania, in 1904, but who subsequently left the country to settle in the United States, published the Quality Control Handbook in 1951. This paper does represent the ABC of quality control and it is properly considered a defining landmark of the three pillars of TQM, a trinomial known as the name of "Quality Trilogy". According to Juran (1989), the three fundamental pillars refer to planning, control and quality improvement. Planning consists in identifying the objectives as well as the framework of activities' deployment in order to accomplish quality. Statistical control consists in applying total quality management techniques. Quality improvement focuses on correcting and eliminating defects and it is known as "zero defects" technique. The evolution in time of this last concept has led to the replacement of errors identifying and reporting activities with their prevention. Unlike Deming who accentuated the importance of employees' role in achieving quality, Juran highlighted the role of managers and conducted his analysis by assessing the technical methods that were used, with focus on the presentation of goods and services, as well as on their compliance with quality standards, on their availability in stocks, on the comfort provided and on their safe utilization. Thus, total quality concept, in accordance with Juran's opinion, incorporates final consumer's vision. His management techniques are based on compliance, assessment and remediation.

However, the economic literature developed on TQM conceptual model has not a general application. Juran's approach generated a series of controversies in American economic environment starting with 1980. Thus, the American Medical Certification Association

(AMCA) criticized sharply the utilization in the medicine field of TQM model. Therefore, as a reflection point, the TQM model should be tested previously in the field of its utilization, by means of case studies and empirical data in order to demonstrate its applicability in the case in which we notice a positive correlation between performance and the results of TQM implementation techniques.

TQM models' conceptualization is currently performed by academic institutions in the field of research, standardization and innovation, as well as by the National Institute of Standards and Technology (NIST), the Union of Japanese Scientists and Engineers (JUSE) or the European Foundation for Quality Management (EFQM), without this list is an exhaustive one. In order to produce the expected results, conceptual modeling is based on empirical data.

However, two decades ago, the general opinion was that the employed workforce had as single objectives, the performance of the organization, the profitability and growth of shareholders or management benefits. It was noticed that those goals really brought short-term advantages, but on a broader time horizon the pursued objectives led to adverse effects if they were not accompanied by a long-term vision on market evolution, correlated with consumers' needs. In order to improve the quality of goods or enterprises' services, there was the possibility to resort to statistical control methods, consisting in the use of diagrams to analyze production process. Pareto and Ishikawa Diagrams were utilized in the industrial sector for identifying errors, by observing causes and effects. At present, statistical control methods are replaced by quality assurance methods. Therefore, we can state that statistical diagrams are currently used for a preventive purpose in order to improve quality, instead of using them to identify and correct quality deficiencies by means of control actions (Kaynak, 2003).

Nowadays, managerial vision focuses on the consumer and it pursues a continuous long-term improvement at the level of goods and services' quality (Drucker, 1990; Easton and Jarrell, 1998). The positive externalities generated have thus a lot of benefits for company's profitability and prosperity on a time horizon. Loyalty programs or those of customers' fidelization as well as enterprise's reputation on market represent significant issues for assessing its competitiveness, beyond the numerical data of economic or financial profitability.

The permanent training of employees for achieving quality and creating an attractive working environment by a continuous motivation of the workforce are important issues for determining a managerial strategy for a sustainable economic growth.

The Excellence Model adopted by the European Foundation for Quality Management adds other several characteristics: the leaders are people who must inspire trust and fairness, create a pleasant working environment adapted to results, and promote ethics and transparent communication. Operational processes should be integrated into a data flow, enabling an efficient resource allocation in order to meet customers, clients or business partners' expectations. Computerization can bring substantial benefits in time savings and lower expenses, in other words, less effort for getting performant and innovative goods and services, strategically designed to meet consumers' long-term needs.

Similarly to the excellence model, the Union of Japanese Scientists and Engineers develops mathematical and statistical models applicable to corporate management (Terzioski and Samson, 2000). Quality control includes analogically various fields in the North American continent, with applicability in assessment, quantification and standardization, by means of the National Institute of Standards and Technology (Rao, Solis and Raghu-Nathan, 1999).

TQM model should be seen as incorporating the techniques of statistical control. By default, the evolution of TQM model from the Deming approach to the contemporary model, attracted the change of the optic regarding the pursued aim by means of quality control activities.

At the level of the industrial production corresponding to 90s, TQM model applicability involved the close cooperation between employees in order to get quality product, delivered on time, in satisfactory price conditions for customers, with an increased profitability for the company itself. These are the results of the research (Kim and Miller, 1992) performed over 111 American companies in the United States. In addition, the research paper of Schmenner and Cook (1985), shows that the positive effects associated to TQM model application are the reduction of the labor time, the diminution of stocks as well as the improvement of production. Introducing loyalty programs in companies' managerial strategy does present real advantages in terms of economic performance (Ittner and Larcker, 1997).

The TQM model, as it has been recently developed, brings to the fore relevant factors contributing to quality assurance, respectively a motivated workforce, the management, marketing strategies and trade policies directed towards performance, as well as the operational processes integrated in the informatics flows. Another significant factor is that of the satisfaction corresponding to clients and/or final consumers. In their works, Longbottom, Mayer and Casey (2000) and Mohr-Jackson (1998), highlight the importance of marketing techniques designed for satisfying customers' needs.

Statistical control activities, previously known as quality inspections, are completed or even replaced with SWOT analyses for identifying weaknesses and strengths, opportunities and threats (Armitage and Atkinson, 1990). Managerial strategies taking into account these issues, do have the ability to confer economic sustainability for the companies that implement them. Thus, by way of illustration, famous companies producing branded products known as high quality goods appeal to only some providers with whom they have collaboration contracts but who offer raw materials whose quality meet customers' stringencies (Reed, Lemak and Montgomery, 1996). Therefore we consider that, the quality of goods as it is highlighted in the cause-effect diagram does show that each factor contributing to the quality achievement, should meet particular performance standards of quality. However, only in this framework, we consider that the TQM model has the potential to stimulate innovation. The increase of economic profitability must be supported by profit reinvestment programs in order to finance innovation, to test new products for bringing them to market for meeting the final consumer's needs (Hendricks and Singhal, 2001). Applying the TQM concept in the pharmaceutical sector, for example, must be accompanied by applied research programs. However, it should be noted that the economic literature is full of pros and cons (Prajogo and Sohal, 2001; 2004; 2006), regarding TQM model's capacity to stimulate innovation.

The correlation between the application of TQM model and the achievement of the economic performance by companies, activating in a particular sector, requires statistical data for a period of time of minimum 5 years, in order to analyze the evolution of the economic profitability as well as the impact got by implementing the TQM model. It is the example provided by the economists Blanco Gutierrez (2010) and Ton and Harrow (2010), who analyzed the pattern of Mercadona business model of management. In 1993, Mercadona introduced the TQM concept and became a famous supermarket, making use of TQM principles to attract clients, through customer loyalty, high quality of products and

minimum prices. By applying TQM management model, Mercadona avoided the negative consequences of the economic crisis during 2008 (Callejo, 2012). Moreover, Khanam, Siddiqui and Talib (2014) conducted a study which concluded on the importance of applying TQM and IT resources in order to achieve the customer satisfaction, with direct application in the information technology industry and telecommunications.

A paper which raises high interest is that of Izogo (2017), which examines how companies can influence customer loyalty through customer engagement by insuring reliability. Another case study which reflects the evolution of the TQM model is presented in the article of the economists Abrunhosa and Sa (2008) in the manufacturing sector. Examples continues with the introduction of ISO standards as performance models used by companies (Ab Wahid, Corner and Tan, 2011; Ilkay and Aslan, 2012; Basaran, 2016).

Most often, the underlying Deming principles can be found in the ISO quality standards, developed by the International Organization for Standardization (ISO) and, respectively, by the International Electrotechnical Commission (IEC). In Romania, the ISO allows local companies to be recognized on the market for the competitive level of goods and services, having a particular quality, which positions them within a hierarchy of values at the European level. Professional associations, national public institutions, companies activating in Romania, market monitoring authorities, as well as compliance assessment bodies and consumer protection associations do appoint their representatives to participate in the standardization process in order to promote their interests in the sectors covering standardization, under the coordination of the Romanian Association of Standardization. At the national level, the TQM model has been the subject of a couple of research papers (Ilies, 2004; Stanciu, 2003).

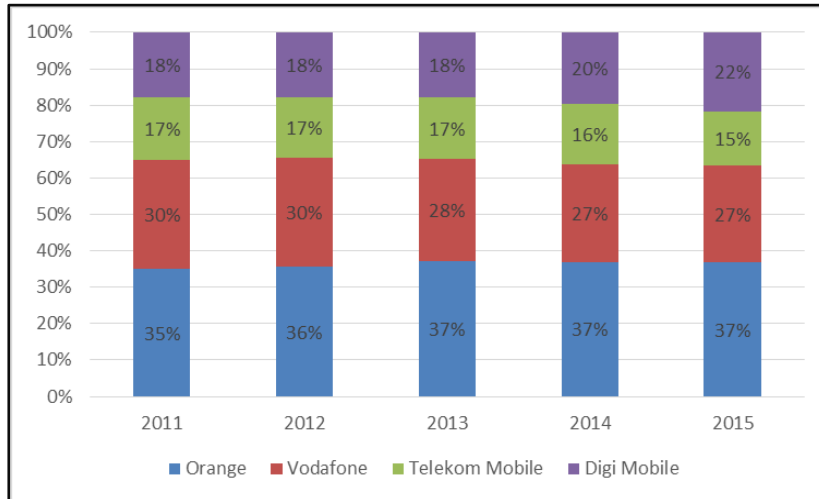
## **2. The TQM model applied in mobile telecom sector**

### **2.1. Short description of the sector**

At present, the mobile telecom market in Romania is an oligopolistic one, competition taking place between companies such as: „Telekom Romania Mobile Communications S.A.”, „S.C. Orange Romania S.A.”, „S.C. Vodafone Romania S.A.” and „Digi Mobile S.A.” - part of RCS&RDS Company.

In terms of the evolution of the turnover specific to the mobile telecom sector, the market shares of the main market players, during 2011-2015, could be seen in the figure no. 1.

From the figure no. 1, we can notice that, in the analyzed period, the two big players on the mobile telecom market in Romania, respectively Orange and Vodafone, kept their leading positions, but they lost a part of their market share to the detriment of smaller players. Thus, from 2011 to 2015, Orange has raised its market share by 2 percentage points, while Vodafone lost 3 percentage points. Cumulatively, the top three companies in the sector have lost about 3 percentage points at the expense of Digi Mobile. This fact is primarily due to intensive marketing promoted by Digi Mobile in recent years, but also to its diversified offers.



**Figure no 1: The evolution of the market shares determined by the turnovers of the main market players in the Romanian mobile telecom market, between 2011 and 2015**  
 Source: Author's own calculations based on dates from the Ministry of Finance, 2015

**2.2. Research Methodology**

In order to analyze the influence of the TQM implementation in achieving the competitive advantage as well as the companies' performances in the telecom sector, we conducted a quantitative analysis - survey based on a questionnaire and the hypotheses of structural equation modeling (SEM) were tested by means of the Partial Least Squares Path Modeling (PLS-PM). Data analysis was performed using the SmartPLS 2.0 M3 software.

The objective of the research presented in this paper is to validate the causal relationship between economic performance and TQM model by analyzing the data collected in the telecommunications sector in Romania. The article also explores the impact of TQM model, represented by employee motivation, quality of management, strategies and trade policies, integrated operational processes and employee satisfaction on the performance of the organization.

Data collection was also conducted by means of a survey addressed to the employees and managers in the telecom sector. The number of the respondents was elected proportionally with the market shares of the fourth market players and the sample was random. The volume of the sample was calculated as the number of indicators multiplied by 5-10 (Kristensen and Eskildsen, 2010). Thus, the sample must have at least 16 indicators \* 5 = 80 respondents. Authors collected data from 100 respondents and only 90 questionnaires were valid.

The answers at the questions were either binary (YES=1, NO=0), or by using a Likert 5-point scale, from "very little = 1" to "very much = 5". The questionnaire was pre-tested several times in order to guarantee that the format, the language and the order of the questions are adequate.

The purpose of this research study consists in analyzing the TQM effects on the performances of companies within the telecom sector in Romania. Starting with Edwards Deming conceptualized model, as it was described in the previous chapter, the following six proxy variables were considered successful factors in terms of the TQM implementation (table no. 1): the motivated workforce, the quality of managerial activities, trade strategies and policies, integrated operational processes and consumers' satisfaction.

**Table no. 1: Construction of independent variables (formative variables)**

<b>Motivated Workforce (MOTIVE)</b>	
<b>Motive_1</b>	Existence of professional training programs
<b>Motive_2</b>	Employees' motivation through participation in decision-making process
<b>Motive_3</b>	Existence of assessment programs in order to improve quality
<b>Quality of managerial activities (QUAL)</b>	
<b>Qual_1</b>	Managerial activities quality
<b>Qual_2</b>	Management policy based on control actions
<b>Qual_3</b>	Managerial programs for employees' periodic evaluation
<b>Qual_4</b>	Managerial policies based on prevention activities
<b>Trade Strategies and Policies (STRATEG)</b>	
<b>Strateg_1</b>	Planning activities according to market evolution
<b>Strateg_2</b>	Managerial strategies adapted to market competition model
<b>Strateg_3</b>	Marketing strategies adapted to consumers
<b>Integrated operational processes (PROC)</b>	
<b>Proc_1</b>	Existence of technical facilities necessary to the operationalization/functioning
<b>Proc_2</b>	Resilience capacity of functioning/operating processes
<b>Proc_3</b>	Identification of errors in operational processes
<b>Consumers' satisfaction (SATISF)</b>	
<b>Satisf_1</b>	Training programs for acquiring quality
<b>Satisf_2</b>	Quality Performance
<b>Satisf_3</b>	Employees' motivation to achieve quality

These are the latent formative variables in the model, while the latent reflective variable (dependent variable) is the "organizational performance" with the two proxy variables: "product quality" and "return on assets" (ROA) (Mohr-Jackson, 1998).

The five independent variables, along with the dependent variable, previously described, build the structural model which is to be tested and validated in this paper (figure no. 2).

Now we could formulate the statistical hypothesis, which will be tested in SMART-PLS:

H<sub>1</sub>: The motivation of the employees has a positive impact on organizational performance

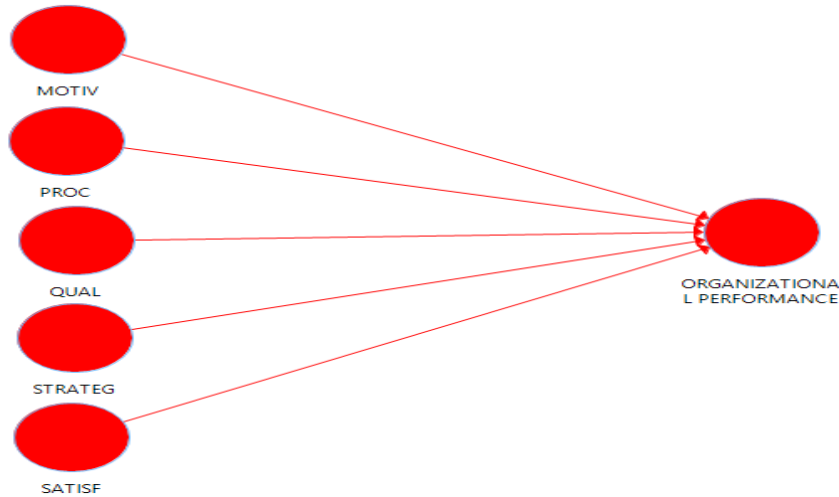
H<sub>2</sub>: The management quality is positively correlated with the organizational performance

H<sub>3</sub>: The strategies and the commercial policies have a positive influence on organizational performance.

H<sub>4</sub>: Operational integrated processes have a positive impact on the organizational performances.

H<sub>5</sub>: Employees' satisfaction is positively related to the performance of the organization.





**Figure no. 2: Conceptual structural model which incorporates the TQM effects on Organizational Performance**

**2.3. Results and discussions**

The survey conducted based on questionnaires was addressed both to the management and the execution staff. The distribution of the answers can be observed in the table no. 2, grouped by the organization in which the respondents work:

**Table no. 2: Distribution of respondents**

Level	Orange	Vodafone	Telekom	Digi
Management	6	5	4	4
Executive	26	22	15	13
<b>Total</b>	32	27	19	17

Before analyzing the model, we will need to verify the signification degree each formative variable. We will perform this by using Cronbach’s alpha and Dillon-Golstein  $\rho$  coefficients (Tenenhaus et al., 2005). Table no. 3 shows the results of these indicators.

**Table no 3: Reliability and validity of the formative variables**

Construct	Cronbach's Alpha	Dillon Golsteins' rho	Composite Reliability	AVE	VIF
<b>MOTIV</b>	1.000	1.000	1.000	1.000	2.217
<b>PROC</b>	1.000	1.000	1.000	1.000	1.420
<b>QUAL</b>	0.708	0.722	0.823	0.709	1.534
<b>SATISF</b>	0.613	0.683	0.685	0.687	2.826
<b>STRATEG</b>	0.689	0.671	0.698	0.649	2.485

From the above table we could see that the values associated to the indicators previously introduced are greater than 0.7, which means that all five independent latent variables are reliable for the analysis. Moreover, the collinearity of the variables was tested. According to Hair, Ringle and Sarstedt (2013), values of VIF (*variance inflation factor*) greater than 5 indicate the presence of collinearity among the exogenous variables. Since all the values from the previous table are less than 5, results that there is no collinearity among the independent variables from the model.

The data analysis was done by PLS-SEM, which consists in two sub-models, the quantification model, also named the formative model (outer model) and the structural model (inner model). The choice of PLS-SEM was given by the fact that it is more robust than other methods, such as CB-SEM, and less sensitive to skewed distributions, small size surveys or to the multicollinearity (Hair, Ringle and Sarstedt, 2013).

### 2.3.1. The formative model

The formative model was evaluated with the help of convergent and discriminant validity. In statistical terms, the relationship between the formative and reflexive variables is determined by the following structural equations models (SEM).

$$\{y = \Lambda_y \eta + \varepsilon_y \quad (1)$$

$$\{x = \Lambda_x \xi + \varepsilon_x \quad (2)$$

where:

$\eta$  - endogenous latent variable;

$\xi$  - exogenous variable;

x and y - observed variables;

$\Lambda_x$  and  $\Lambda_y$  - matrices of the systems of equations corresponding to latent variables;

$\varepsilon_x$  and  $\varepsilon_y$  - the residual variables.

#### a. Convergent validity

##### *Model I*

According to Chin (2010), from the model should be excluded the variables with path coefficients less than 0.5. Thus, from the model will be excluded the following variables: *motiv\_1*, *motiv\_3*, *proc\_1*, *proc\_3* and *qual\_2*. All these variables have path coefficients less than 0.5 (figure no. 3).

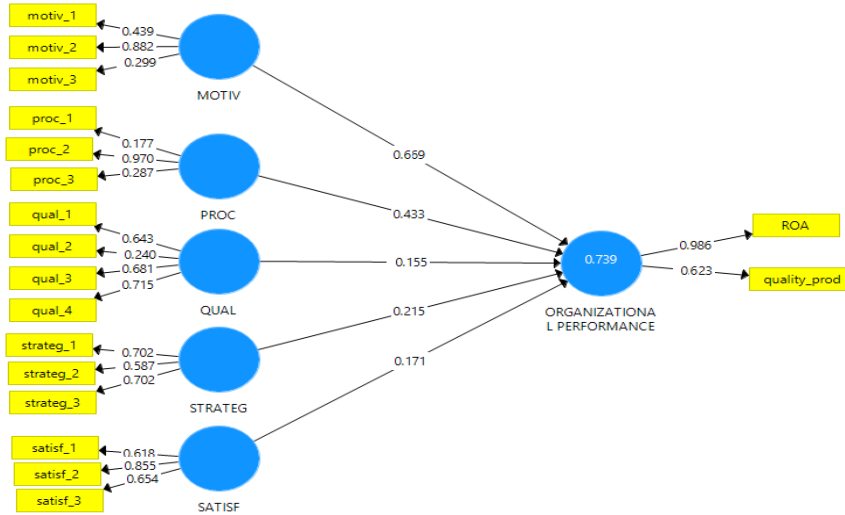


Figure no. 3: PLS-SEM Model 1

The second model is obtained from the first one, after we exclude the variables previously mentioned. Now we will run another PLS-SEM analysis with the left variables (figure no. 4).

**Model II**

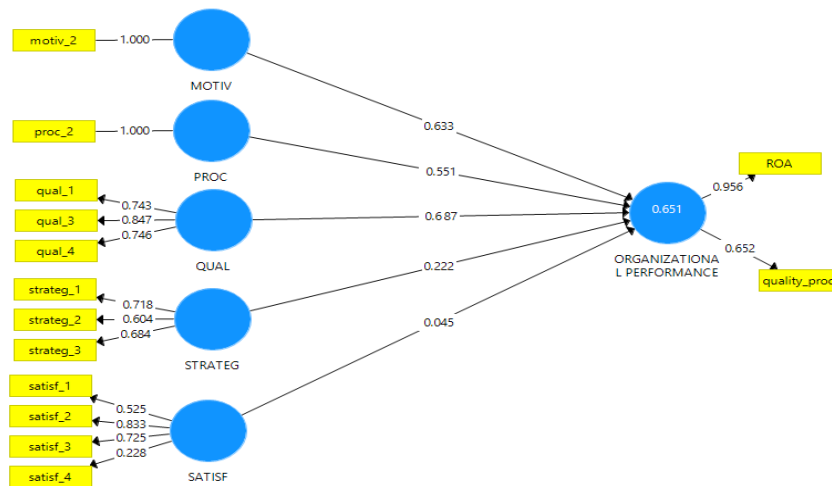


Figure no. 4: PLS-SEM Model 2

This new model has all its path coefficients greater than 0.5, so the convergent validity of the model is confirmed.

### b. Discriminant validity

Discriminant validity could be checked by the AVE (average variance extracted) indicator (Fornell and Larcer, 1981). The authors state that, if the value of the indicator is greater than the square of the correlation coefficients between the latent variables, then the discriminant validity of the model is confirmed. These values could be observed in the table no. 4.

**Table no. 4: Correlation coefficients between the latent variables**

Latent variables	AVE	Square of the correlation coefficients of the latent variables					
		Motiv	Proc	Qual	Satisf	Strateg	Org P.
<b>MOTIV</b>	1.000	1					
<b>PROC</b>	1.000	.616	1				
<b>QUAL</b>	0.709	.681	.475	1			
<b>SATISF</b>	0.687	.537	.489	.531	1		
<b>STRATEG</b>	0.649	.503	.275	.547	.468	1	
<b>ORG. PERF</b>	0.589	.407	.358	.501	.373	.336	1

Source: Data analysis was performed by the authors valuing SmartPLS 2.0 M3 software

By making comparison between the AVE indicator and the square of the correlation coefficients between the latent variable from the structural model, the discriminant validity is also confirmed.

### 2.3.2. The structural model

The structural model was described in Figure 2. That shows us relationships (paths) among the latent independent variables from the model and the dependent variable. Statistically, according to Fornell and Cha (1994), the structural model is:

$$\eta = B\eta + \Gamma\xi + \zeta \quad (3)$$

where:

- $\eta$  - vector of latent endogenous variables;
- $\xi$  - vector of latent exogenous variables;
- $\zeta$  - vector of residual variables;
- B and  $\Gamma$  - the path coefficient matrices.

The structural model could be evaluated through the values of R-squared and path coefficients. According to Figure no. 2, the value of R-squared is 0.651, which means that 65.1% of variability of the organizational performance from Mobile Telekom Sector is explained by the variation of TQM model. Moreover, the path coefficients of the structural model are all positive, which means, the greater values have the latent variables, the greater the organizational performance would be. Out of the five indicators, the most impact on the organizational performance is "motivation" (path coefficient 0.633), followed by the "existence of the integrated organizational processes" (path coefficient 0.551) and "strategy". The least impact on organizational performance is given by the "quality of the commercialized products" (path coefficient 0.087) and the degree of employees' satisfaction (path coefficient 0.045).

The two reflective indicators of the dependent variable "organizational performance" have positive path coefficients greater than 0.5. That means both variables from the reflective model (ROA and quality\_prod) are statistically significant for the dependent variable.

Furthermore, for testing the statistical hypothesis, described before, it was realized a Bootstrap Test (300 sample) to generate the t-values and standard deviations of the analyzed parameters. The results are noted in the table no. 5.

**Table no. 5: Hypothesis testing results**

Hypothesis	Path Coef.	Std. Error	t-value*	P_value
<b>H<sub>1</sub>: MOTIV -&gt; Organizational Performance</b>	0.633	0.213	3.972	0.003
<b>H<sub>2</sub>: PROC -&gt; Organizational Performance</b>	0.551	0.324	2.698	0.045
<b>H<sub>3</sub>: QUAL -&gt; Organizational Performance</b>	0.687	0.160	3.349	0.017
<b>H<sub>4</sub>: SATISF -&gt; Organizational Performance</b>	0.045	0.128	0.349	0.259
<b>H<sub>5</sub>: STRATEG -&gt; Organizational Performance</b>	0.222	0.214	1.037	0.300

Note: \*t-value 2.58 (sig. level = 5 %)

The hypothesis for which the p\_values are less than 0.05 are validated, while the other ones are not. Thus, we conclude that the Hypothesis H<sub>1</sub>, H<sub>2</sub> and H<sub>3</sub> are valid, and H<sub>4</sub>, H<sub>5</sub> are not.

Eventually, we could observe that the motivation of the employees and the quality of the management have a positive impact on the organizational performances from the analyzed sector.

**Conclusions**

By applying structural equations modeling SEM -PLS in research activities, this study identifies and analyzes the relationship between TQM model determinants and economic performance in business. The assessment of the results indicated that the obtained model is robust, given that a significant percentage of the variance in the dependent variable is explained by the independent latent variables.

Thus, the results highlighted that TQM practices are strongly based on the staff motivation, in view of the positive and significant result of staff motivation and performance of organizations. Once the competitive pressure grew, businesses are forced to keep their best employees, and this is achieved primarily through the way organizations manage to motivate them. Offering a competitive salary and a performance-oriented framework are needed to motivate staff attributes an enterprise. Focusing on employee motivation, organizations will be able to increase their performance.

According to the conclusions of the study at stake, the quality of the management also has a direct and powerful impact in terms of performance of telecom organizations. Top management directly and indirectly affects the performance of organizations in the sector through the mediating effects of the management processes. Consequently, the success of TQM applications depends significantly on the quality of the management. The continued

involvement and quality management in the organization lead to increased performance. The management of an organization is directly responsible with the determination of the organizational culture, the vision and the corporate policies enforced by enterprises. Managers must also develop specific and measurable targets to achieve the expectations of consumers and to increase organizational performance.

The survey results emphasize that integrated operational processes within an organization have a positive impact on the performance of organizations active in the telecom sector. Important factors which converge towards increased performance regard the quality of the technical equipment, the adaption of business procedures to the needs of the market and regular reporting of errors identified by management in order to fix them. Under these circumstances, the significant contributions of the management process (including inspections and supervisions) lead to increased total quality of the management of these organizations. This explains the high coefficient of the management processes of the model.

Another important conclusion is that the telecom enterprises should focus on reducing variation in manufacturing processes to improve performance. To increase the performance, a close connection between the motivation of the workforce, quality management and business process integration should exist. For telecom business in Romania, targeting both their own employees and the customers is the most important practice that can increase the performance of organizations.

Given the relatively small number of respondents, a limitation of this analysis refers to the sample size to the fact that the study refers to a single industry. In addition, the lack of macroeconomic indicators and the subjective responses of the surveyed people could also be another limit of this research.

Further research on the effects of TQM on organizations' performances should be extended to other industries and the analysis to include the possible macroeconomic effects. Also, future studies that would examine the increase of the performances of organizations, by implementing TQM techniques, would be very useful.

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