
Improving local public administration responsiveness to citizens' needs using Quality Function Deployment

Laura Mina-Raiu (laura.minaraiu@amp.ase.ro),
Bucharest University of Economic Studies

Viorela Negreanu (negreanuviorela@stud.ase.ro)
Bucharest University of Economic Studies

Cătălin Valentin Raiu (catalin.raiu@faa.unibuc.ro)
Bucharest University

ABSTRACT

Total quality management is one of the most spread management approaches focused on improving products, services and processes with the aim of achieving a higher organizational competitiveness. This paper emphasizes the key role of the planification process, seen the first and most important phase in achieving quality services, which significantly influences all the following phases of the quality management process. The paper analyses the way local public administration should respond to citizens needs in order to improve its responsiveness, according to internationally consecrated good governance tools. We explain what is the Total Quality Management (TQM) framework, firstly developed within the private sector, and afterwards analyse the needs expressed by the citizens of Roșiori de Vede using a questionnaire and statistical analysis in order to design local administrative services that correspond with citizens' needs and expectation. We argue on the potential of the QFD matrix, as planning tool which might help public organizations focus less on the internal environment and more on the external environment, by understanding better customers needs and designing public services accordingly.

Keywords: quality management, local public administration, quality planning, public services, citizens' needs and expectations, Quality Deployment Function (QFD)

INTRODUCTION

Public administration provides social justice, influences the quality of citizens' life and is recognized as a major factor in the development and economic growth of a country. Global competitiveness and the pressing demands of citizens and businesses force public organizations to redesign

their operational functions and improve the services they provide. Thus, in recent years, practices in the private sector of production and services have been replicated in the public sector, in developed countries.

These practices relate to customer-oriented approaches, quality measurement, pay-for-performance, continuous process creation and information quality. All these practices fall under the standard of the total quality management (TQM) philosophy, which aims to develop operational processes to increase citizen satisfaction.

The aim of the research to explore the potential of the quality planning process within the municipality of Roşiori de Vede using Quality Function Deployment instrument, in order to improve quality management within the institution and therefore to increase citizens' satisfaction.

The paper is structured into four sections. First we present theoretical aspects related to total quality management in the public sector, showcasing the crucial importance of the quality planning phase within the total quality management. Then we focus on the methodology, detailing the Quality Function Deployment stages and instruments. A case study of the Roşiori de Vede municipality is later on presented, revealing the results of the QFD matrix, as tool meant to bring together the "voice of the client" and the "voice of the organization".

THEORETICAL ASPECTS REGARDING QUALITY PLANNING IN THE PUBLIC SECTOR

Total Quality Management (TQM) is an integrated management philosophy and set of practices that emphasize, among other things, continuity, meeting customer requirements, reducing repairs, long-term thinking, increased employee involvement and teamwork, processes redesign, competitive benchmarking, team-based problem solving, constant measurement of results and closer relationships with suppliers (Powell, 1995).

At global level, public sector faces the reality of operating with scarce resources, but with increasing demands for accountability for the use of citizens' funds (Pollit, 2010, Profiroiu and Negoită, 2022). From the early 1980s, there were calls for public sector reform, later called "new public management" (NPM). These reforms were and still are motivated by efforts to make government less wasteful, more efficient, and more responsive to citizens' needs and expectations. However, the actual transformation of the public sector and its projects from a closed system bureaucratic orientation to a more open system orientation has not been without challenges that are mainly concerned with the reduction of bureaucracy. Indeed, success in

government reform has been achieved by those departments and agencies that have been able to adapt to a more open operational approach fuelled by a business-oriented perspective rather than a bureaucratic philosophy.

An important element of quality management is the planning process (Juran and Gryna, 1993), because planning efforts (e.g., process design and analysis, capacity analysis and equipment selection, market research, product features and options, planned staffing levels, and training) are often related to the introduction of new products and services. Moreover, following Juran's trilogy for quality management (Plan, Check and Improve), planning is the key process, that sets the objectives and acts as a map for the following ones.

According to Huang and Dastmalchian (2006), customer orientation can increase customer satisfaction and loyalty while enhancing profitability and competitiveness. These attributes led to the adoption of the customer orientation principle, as fundamental principle of the TQM philosophy, by the public sector, as public bodies began to increasingly recognize the need to satisfy citizens' explicit and implicit requests. However, most times the goal of integrating citizens' reality into the reality of public sector organizations is difficult to pursue. In such instances, a useful tool to reflect the clients' world in organizations' logic is QFD function (Dobrin, 2005).

QFD is a product or service quality planning tool that essentially consists of a series of interlinked matrices that identify and translate customer requirements/desires into technical specifications for product/service design and production. Japanese professor Yoji Akao (1990), the creator of QFD defined it as a method for transforming customers' qualitative requirements into quantitative parameters to carry out the functions that form quality and to carry out methods for achieving quality in design in subsystems and component parts and finally in specific elements of the manufacturing process. Akao considers QFD is best suited for assuring quality in design while the product is still in the design stage.

Quality Function Deployment has been widely used in various sectors to translate customer requirements into technical features. QFD provides a robust framework to consider customer expectations together with production capabilities in a quantitative way so that the target specifications of a particular product or service are in line with customer expectations (Liden and Edvardsson, 2003). In addition, QFD is a quality system that ensures customer satisfaction within the scope of total quality management (Zultner, 1993). Basically, the implementation of the quality function aims at better products, using fewer resources. Also, with the help of this method, the number of complaints arising from technical changes, design process, start-up and product costs are reduced on a large scale. More often than not, organisations

tend to focus internally and therefore develop services or goods with a vague understanding of citizens' needs or too focused on the external environment, constantly trying to please customers at the expense of their own business (Bouchereau and Rowlands, 2000, p. 9).

The main advantage of QFD is its structural implementation. QFD is based on the philosophy of total quality management, it supports quality improvement, but unlike most theories about quality management, QFD uses tools, graphs and statistics to quantify quality (Ikiz and Masoudi, 2008). The main feature of the QFD approach to quality improvement is the "House of Quality (HOQ)". It is the basis of all QFD processes and incorporates a large amount of data from various sources such as surveys, interviews and customer complaints. It is a matrix that identifies the 'what', the 'how', the relationships between them and the criteria for deciding which of the 'how' will provide the greatest customer satisfaction (Chahal and Thareja, 2012).

METHODOLOGICAL FRAMEWORK

The aim of this research is to improve the quality planning process in local public administration institutions, in order to improve quality management in the public sector and implicitly increase citizens' satisfaction. In correlation with this goal, a series of research objectives were defined: (1) using the QFD function to identify and prioritize the requirements of the citizens; (2) Determine the level of interdependence and correlation between citizens' requirements and the services offered; (3) Identify the main aspects that determine the degree of satisfaction and dissatisfaction of citizens; (4) Identify ways to improve the planning process.

A small-scale analysis was performed, using Roşiori de Vede Municipality as a pilot case study. According to the latest national census, in Roşiorii de Vede there are 24.222 inhabitants living in 5479 buildings (Recensământ, 2022). The choice for a small town from a rather underdeveloped county of Southern Romania was based on the fact that the capacity of local authorities to implement quality management is limited and therefore the potential of TQM tools becomes significant in such contexts.

The Quality Function Deployment (QFD), which is a particular TQM planning tool was used to collect and analyse data. According to QFD methodology, the first step is to identify citizens' opinion regarding the services offered by the public institution, and thus, to complete the first "room" of the QFD matrix, the one in which the VOC (Voice of Citizens) is presented. The main source of primary data was the citizens' feedback, obtained through a questionnaire distributed to the citizens both face to face and online, through

social media platforms, on several online groups, whose members are the citizens of Roşiori de Vede municipality.

Technical requirements (HOWs) were defined and developed for the second step. The vital question is “how” could the public institution provide the necessary services to the citizens. In the QFD process, the customer requirements in the “HOQ” were translated into measurable or quantifiable features. Interviewing and talking to employees was the way to get opinions about the technical requirements.

Completing the relational matrix, between citizen requirements (WHATs) and technical requirements (HOWs), was the next step in completing the QFD matrix. The function of this step is to rank the technical requirements according to the degree of relation they have in meeting the citizens’ demands.

Step four consisted of completing the “roof” of the diagram, the correlation matrix, which was intended to indicate how each technical requirement relates to the other.

To complete the “Importance” room the scores given by the citizens were used and were obtained by calculating the arithmetic average of the marks given by the citizens for each mentioned characteristic.

In the “Service Evaluation” room, the scores obtained by applying the third section of the questionnaire were entered and they show the differences between citizens’ requirements and their perception of the services that were actually provided.

The room on “Planned Quality” was completed with the importance scores that the public institution can give, in the future, to the services provided to satisfy the demands expressed by citizens.

The “Growth Factor” is the room where the ratio of each of the “Planned Quality” and “Service Evaluation” room scores was calculated

The next step in completing the matrix was to determine the “Absolute Importance (1)”, which was calculated as the sum of all the products between the score value in the relational matrix (9, 3 or 1) and the importance score given by the citizens for each individual requirement.

Another step followed was the calculation of the “Relative Importance 1” room, which was calculated as a percentage, by the ratio between the Absolute Importance for each individual requirement and the sum of all Absolute Importance, multiplied by 100.

The next chamber is “Absolute Importance (2)”, calculated in the same way as “Absolute Importance (1)”, except that the relational matrix has been multiplied this time by the scores from the “Planned Quality” chamber.

And, to calculate “Relative Importance 2”, the same procedure was followed for the calculation of “Relative Importance 1”, but with the scores from “Absolute Importance (2)”.

The last step was to identify the most important requirements, according to the value of the results, which are relevant for increasing the quality of the services offered and to indicate where the allocation of many resources is needed.

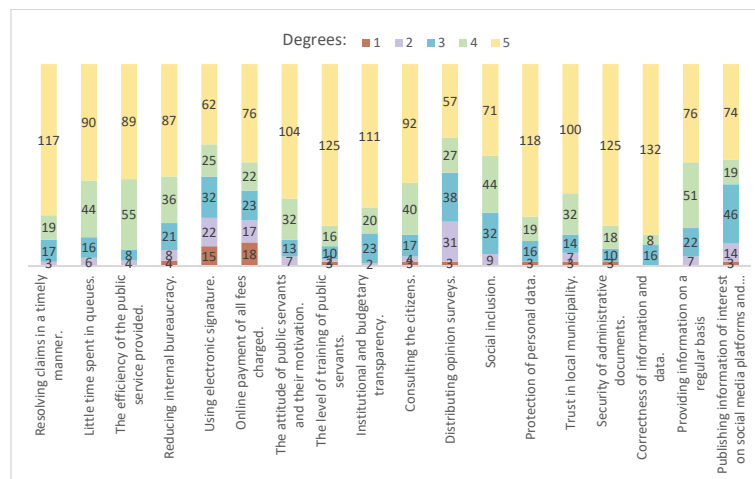
CASE STUDY DESCRIPTION

Roşiori de Vede municipality is organised in 17 departments, services and main offices, each one has subordinate offices and departments. In terms of human resources, 327 positions are occupied in the institution, of which 131 are public positions, divided as follows: 117 junior civil servants, 14 senior civil servants and 194 are contractual positions, divided as follows: 189 contractual positions and 5 contract management positions. The average age of human resources is 45 years, there are 56% women and 44% men.

The results of the second section of the applied questionnaire, the one formulated to determine the degree of importance that citizens attach to the services that the public institution offers, are represented in the form of a graph, showing both the marks and the number of citizens who granted them.

Citizens’ expectations regarding Roşiori de Vede municipality administrative services

Figure 1



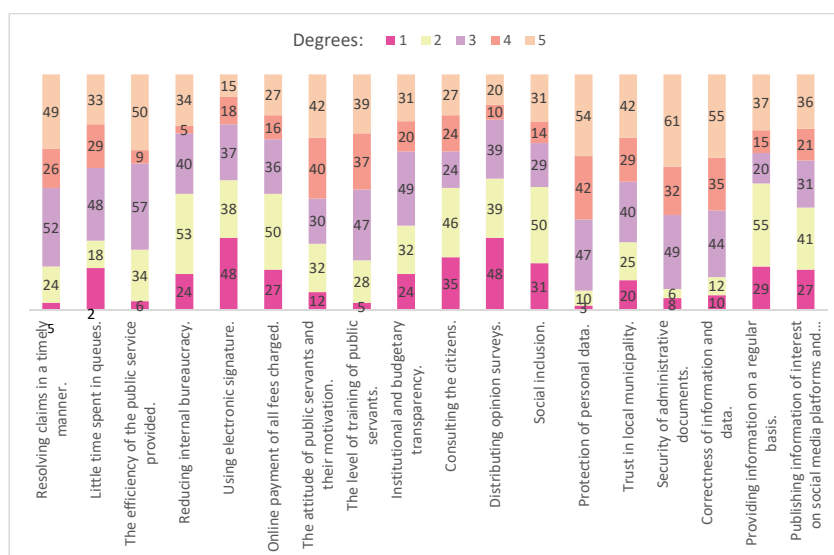
Source: Survey results, 2022

Citizens' expectations are high, with the most degrees awarded being 4 and 5. The most important aspect, in the opinion of the responding citizens, was "Correctness of information and data", the arithmetic mean being 4.74, which shows that citizens want to receive correct information from the public institution. At the opposite pole, "Distributing opinion surveys" scored the lowest at 3.62, indicating that the responding citizens do not attach much importance to surveys.

Regarding the third part of the questionnaire, the one intended to determine the actual experience of citizens with the services offered by the public institution, the results are presented in the graph below.

Citizens' perception regarding Roşiori de Vede municipality administrative services Source: survey results, 2022

Figure 2



The actual experience of the citizens is below the average of the expectations expressed in the first part of the questionnaire, the most grades awarded being 2 and 3. In the perception of the responding citizens, "Protection of personal data" is the consideration with the highest score, 3, 85, indicating that the vast majority of citizens believe that the institution fulfils its mission in terms of personal data and its protection. In terms of low scores, "Using electronic signature" is the least rated by citizens, with an average score of 2.44. Then, "Distributing opinion surveys" is the next poorly rated consideration with an average of 2.45.

As it was presented both in the literature review part and in the methodology, after identifying the citizens' voice and completing the respective room, it is necessary to detail the technical requirements, those that the institution in question can implement to satisfy the citizens' requirements, that can answer the question "How can Roșiori de Vede municipality offer the services that citizens want?". Thus, the following six ways of improving services were stated, as follows: "Reducing the number of procedures", "Efficient management of existing resources", "Technological progress", "Courses of training and specialization of public servants", "Opening to feedback", "Constant data update".

Figure 3 shows the QFD matrix in detail, with all the rooms filled, the correlations established and the results of the formulas applied.

QFD Matrix

Figure 3

Technical Requirements	Reducing the number of procedures.	Efficient management of existing resources.	Technological progress.	Courses of training and specialization of public servants.	Opening to feedback.	Constant data update.				
							Importance	Service Evaluation	Planned Quality	Growth Factor
Voice of Citizens										
Resolving claims in a timely manner.	●	○	△	-	△	-	5	4	4	1
Little time spent in queues.	●	-	△	-	-	-	4	3	4	1,33
The efficiency of the public	○	●	○	○	-	○	4	3	4	1,33

service provided.											
Reducing internal bureaucracy.	●	△	●	-	-	-	4	3	4	1,33	
Using electronic signature.	●	-	●	-	-	-	4	2	3	1,5	
Online payment of all fees charged.	○	-	●	-	-	-	4	3	3	1	
The attitude of public servants and their motivation.	-	△	-	○	●	-	5	3	5	1,66	
The level of training of public servants.	-	-	△	●	△	-	5	3	5	1,66	
Institutional and budgetary transparency.	-	○	○	-	-	△	5	3	4	1,33	
Consulting the citizens.	-	○	-	-	●	-	4	3	4	1,33	
Distributing opinion surveys.	-	-	△	-	●	-	4	2	4	1,33	
Social inclusion.	-	△	-	△	-	-	4	3	4	1,33	
Protection of personal data.	-	-	△	-	-	-	5	4	5	1,25	
Trust in local municipality.	-	○	△	-	-	-	4	3	4	1,33	
Security of administrative documents.	-	-	○	-	-	-	5	4	5	1,25	
Correctness of information and data.	-	-	△	-	-	●	5	4	5	1,25	
Providing information on a regular basis.	-	-	-	-	-	●	4	3	5	1,66	

Publishing information of interest on social media platforms and web pages.	-	-	○	-	-	●	4	3	5	1,66
Absolute Importance (1)	177	103	194	76	136	134	821			
Relative Importance 1 (%)	21,5	12,5	23,75	9,25	16,56	16,32	100			
Absolute Importance (2)	156	97	160	76	126	151	766			
Relative Importance 2 (%)	20,36	12,66	20,88	9,96	16,44	19,71	100			

The QFD matrix presents all information about customer requirements and technical requirements and provides useful information to determine which of the service properties are important for meeting customer needs. As it can be seen, the public institution must improve most of the requirements in the “Voice of Citizens” room, their ratings being below average, the gap between “Importance” and “Service Rating” being easy to spot.

In the diagram presented above, it can be seen the “Relational Matrix” room completed with the specific symbols, thus it was possible to determine to what extent the proposed technical requirements can solve the citizens demands and at the same time with their help the “Absolute Importance” and “Relative Importance”.

The diagram also contains the “roof” of the correlation matrix completed with the related symbols, the biggest link being between “Reducing the number of procedures” and “Technological progress”, due to the fact that the digitalization of the institution would have an important impact on the reduction of procedures that in present are numerous. Between “Technological Progress” and “Constant Data Update” there is a positive correlation, because the data could be updated and sent to the citizens through the institution’s website, social media platforms or even to the citizens’ email, if they want. “Efficient management of existing resources” and “Courses of training and specialization of public servants” represent a negative correlation, due to the fact that material resources used for training and specialization courses could be used for other areas of interest, which would increase the quality of services.

Following the calculation of Absolute Importance (1), the strongest correlation is between “Technological Progress” and all variables in the “Voice of Citizens” room, the absolute importance being 194, or 23.75% relative importance. This fact indicates that digitization must be the first step in the process of planning and improving the quality of services offered. It is necessary for the public institution to offer its citizens the opportunity to benefit from online services, without going to the institution’s headquarters for various formalities or to submit documents.

The second strongest correlation is between “Reducing the number of procedures” and the variables expressed by citizens. Thus, absolute importance scored 177 or 21.5% as relative importance. The result is not surprising, given the fact that citizens want the number of procedures and formalities to decrease, which would lead to the fulfilment of many of their demands, such as reducing waiting time in queues, reducing acts, documents, copies and signatures necessary and would even help to increase the efficiency of services.

On the other hand, the lowest score obtained was the correlation between “Courses of training and specialization of public servants” and all the expressed variables. The absolute importance being 76, and as a relative importance 9.25%. The results clearly express that such courses, although necessary for public servants, cannot solve most of the citizens’ requirements, it is recommended that the institution focus on the technical requirements that obtained a higher score.

Regarding the Absolute Importance (2), the one calculated in relation to “Planned Quality”, it can be seen that a significant increase following the improvements made by the institution would only be in the case of the correlation between “Constant Data Update” and the variables in the “Citizens’ Voice” chamber, the score increasing from 134 to 151, or from 16.32% to 19.7%. Meaning, citizens would be more satisfied with everything about the way the institution provides information to them if “Planned Quality” increased by 1.

CONCLUSIONS

The QFD matrix is a powerful planning tool for the service industry. The case study presented in this paper is meant to illustrate that public sector institutions could indeed benefit from the QFD methodology to match citizens’ requirements with the institution’s internal procedures or actions, to satisfy citizens and even exceed their expectations. Thus, the case study can be used to demonstrate that the QFD process can be modified and effectively applied in services such as those provided by public sector institutions.

Even though QFD is a quality tool introduced by and for the manufacturing industry and used for product design and development, it can be transformed to suit the service sector as well. Also, the model presented can be modified and adapted for a wide range of public sector services. The findings that result from the small-scale analysis based on QFD matrix, using Roşiori de Vede Municipality as a pilot case study, allow us to answer the research question, namely, “What do citizens expect from the services offered by the Roşiori de Vede municipality?”. Citizens expect the public institution to provide them with quality services, modern and suitable for their needs, which is evident from the fact that their expectations far exceed their actual perception, as the “Importance” room scored only 4 and 5, while the “Service Evaluation” room scores were 2 and 3. In this particular context the QFD framework serves as a valuable tool which manages to achieve a trade-off between what the citizens want and what the public organization is able to provide in this respect, by focusing primarily on people, as its point of departure is the “voice of the customers”. This paper is only limited an exploratory case study, based on a small-scale analysis performed at the level of Roşiori de Vede Municipality. However, a future research direction should take into consideration to expand the sample of relevant public institutions.

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