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Malcolm Baldrige National Quality Award (MBNQA) Dimensions in Greek Tertiary Education System

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Abstract

The European Foundation for Quality Management Excellence Model (EFQM Model) and Malcolm Baldrige National Quality Award Model (MBNQA model) are widely known models and are used as channels of Total Quality Management. MBNQA model can be applied by an organization or institution in order to implement the principles of Total Quality Management and to achieve excellence. In the present research the criteria of MBNQA model, such as Leadership, Strategic Planning, Customer Focus, Measurement, analysis, and knowledge management, Workforce focus, Process management. Results are recorded and the views of Pre-service teachers from ASPETE (School of Pedagogical & Technological Education), Thessaloniki, Greece, are analyzed in light of these criteria, highlighting thus the Quality Assurance dimensions of the Greek Tertiary education system. 123 Pre-service teachers from ASPETE Thessaloniki participated in the survey. The strong as well as the problematic situations of the criteria of the MBNQA model were registered and analyzed. Furthermore, the reasons of the low performance and obstacles of the learning process were discussed and ways contributing to Continuous Improvement, that requires constant awareness and focus, were proposed. These points support the MBNQA model as an operational framework for Total Quality Management and also strengthen the results obtained in previous studies for the EFQM Model suggesting that quality award models actually provide a suitable framework for quality management.

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1. Theoretical Framework

Quality Awards and Quality Models are based upon the philosophy of TQM and in particular on the principles of continuous improvement. In [4, 5, 11] claimed that businesses and educational organizations expect to improve their processes, their products or services and their performance after obtaining a Quality Award. In [14] declared that Malcolm Baldrige National Quality Award (MBNQA) is one of the most
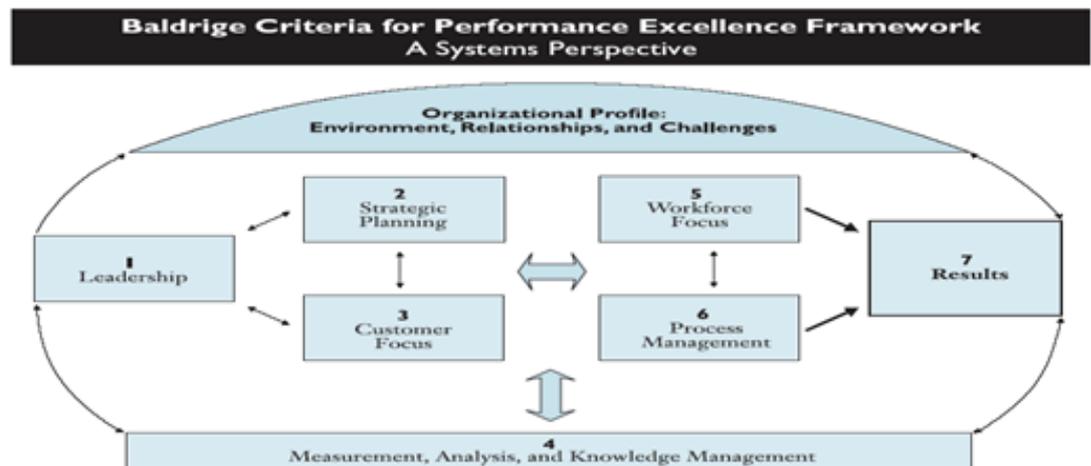
Figure 1: MBNQA.

known assessment models in the world. In [2] supported that MBNQA has evolved from a means of recognizing and promoting exemplary quality management practices to a comprehensive framework for world-class performance, widely used as a model for improvement. Malcolm Baldrige National Quality Award Model (MBNQA model) is the key factor for increasing the competitiveness and the productivity of the American companies and for making known some successful business practices [14]. The MBNQA was established by the United States Congress, on August 20th, 1987 [12]. Named after Secretary of Commerce Malcolm Baldrige, who served from 1981 until his death in 1987, "the intent of the program is to promote US business effectiveness for the advancement of the national economy by providing an approach system for organizational assessment and improvement" [13].

Besides, [18] asserted that "Malcolm Baldrige Award promotes three essential features: the belief that the quality increases the competitiveness, the understanding of the need for excellence and, quality of products or services and the diffusion of benefits by implementing the quality strategies.

Malcolm Baldrige National Quality Award Model (MBNQA model) is used in the area of primary, secondary and tertiary education [1, 2, 13, 15–17].

MBNQA's framework is based on seven independent quality criteria which are presented in Figure MBNQA named "Leadership", "Strategic Planning", "Customer/Student Focus", "Process Management", "Human Resource/Staff Focus", "Measurement, Analysis & Knowledge Management" and "Organizational Performance Results [14].

In the present research the first six criteria of MBNQA model, such as Leadership, Strategic Planning, Customer Focus, Measurement, Analysis, and Knowledge Management, Workforce Focus, Process Management are recorded and the views of 123 Pre-service teachers from ASPETE (School of Pedagogical & Technological Education), Thessaloniki, Greece, are analyzed in light of these criteria, highlighting
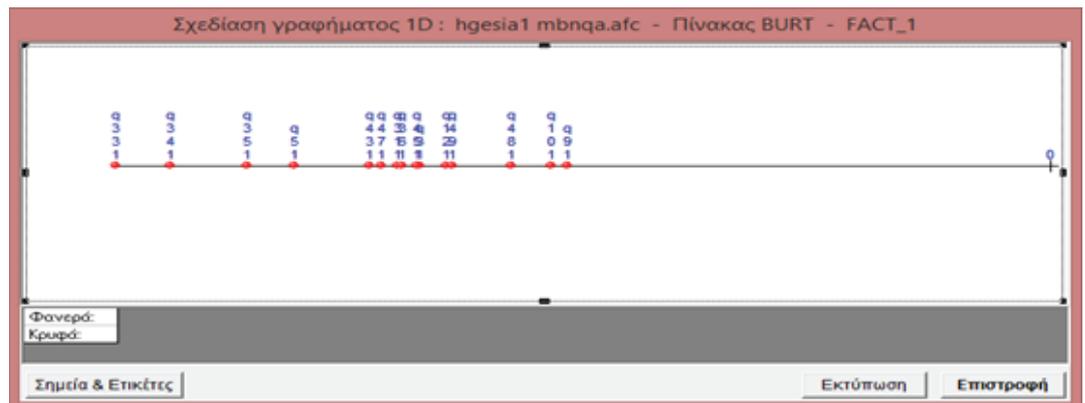
Figure 2: Factorial Axis, Leadership.

thus, the dimensions Quality Assurance of the Greek tertiary educational system. At this point it should be added that ASPETE provides concurrent technological and pedagogical education and training at tertiary level. Its mission includes the promotion of applied research in educational technology and pedagogy, as well as the provision of training, further training or specialization for in-service or prospective secondary teachers.

2. Sample

Our research sample consisted of 123 Greek Students from ASPETE (School of Pedagogical & Technological Education), Thessaloniki, Greece, who were asked to answer the Malcolm Baldrige Performance Excellence Model scale during the academic year 2015-16. In fact, 123 valid questionnaires were collected. Of those Students, 42 were males and 81 females.

3. Results

3.1. Criterion 1-Leadership

Based on summative frequency the two first factorial axes interpret 62.31% of the total inertia, variance or total information of the data. This percentage is considered satisfactory for the data interpretation [10]. Then, from the results table of the factorial analysis of the correspondences and according to the above mentioned criteria we selected (Inertia, correlation and contribution) we identify the variables which contribute to the formation of the first two factorial axes using MAD software [9]. The variables are extracted according to the criteria correlation ($Cor \geq 200$, criterion 2) and contribution ($C\tau r \geq (1000/144) \approx 6.9 \approx 7$, criterion 3) [10].

More specifically, on the left of the first factorial axis e_1, which the significance percentage is 28.18%, the group of students who have a negative attitude towards the quality dimensions in Tertiary Education and in relation to the criterion of Leadership. In more detail, the group of students in question claims that the institution does not integrate public responsibility in efforts of improving performance (Q33.1) (Cor = 888, Ctr = 28), the public's interest in the programs and the institution's contribution is not anticipated (Q34.1) (Cor = 835, Ctr = 22), nor is the public's interest in the future programs and the institution's contribution expected (Q35.1) (Cor = 889, Ctr = 27).

The senior leaders of the organization do not display strong commitment to policies and strategies (Q5.1) (Cor = 859, Ctr = 23).

Furthermore, the students in question maintains that the institution is not sensitive to matters of public interest (Q43.1) (Cor = 902, Ctr = 29), while the organization's leadership (Q47.1) (Cor = 898, Ctr = 27) does not integrate public responsibility in efforts of improving performance Q33.1 (Cor = 880, Ctr = 23)nor does it support and encourage the school's social work Q36.1 (Cor = 862, Ctr = 22).

Moreover, the same group believes that the organization does not try to be the exemplar of matters of public responsibility, morality and citizenship (Q45.1) (Cor = 870, Ctr = 22) because the senior leaders of the institution do not conduct the consolidation of organizational values Q3.1 (Cor = 884, Ctr = 22), the governance system does not ensure the personnel and teaching staff's responsibility (Q12.1) (Cor = 887, Ctr = 22) and the organization does not excel in efforts of improvement of the community's services, including environmental programs (Q49.1) (Cor = 878, Ctr = 22).

The students indicated think that the senior leaders of the organization do not create an environment which encourages learning (Q10.1) (Cor = 846, Ctr = 20) and the organization does not support efforts of empowering the local communities (Q48.1) (Cor = 847, Ctr = 20).

According to the same group of students the leaders of the institution do not create an environment characterized by moral behavior (Q9.1) (Cor = 876, Ctr = 20).

In the second factorial axis e_2 of which the significance percentage is 24.13% that group of students is detected, which has a positive attitude regarding the quality dimensions in Tertiary Education and in relation to the Leadership criterion.

This group of students thinks that the organization integrates public responsibility into efforts of improving performance (Q33.3) (Cor = 844, Ctr = 57) and anticipates the public's interest in its programs and contribution (Q34.3) (Cor = 768, Ctr = 38), since it ensures the moral behavior of all its students (Q38.3) (Cor = 734, Ctr = 38), as the leaders of the institution are approachable to students, personnel and teaching staff (Q15.3) (Cor = 807, Ctr = 47). These students claim that the governance system of the
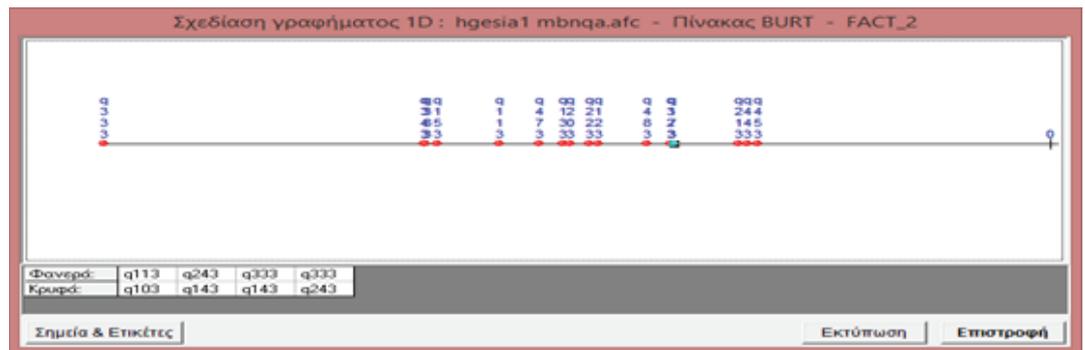
Figure 3: 2nd Factorial Axis, Leadership.

institution ensures the monitoring of the performance of its senior leaders (Q11.3) (Cor = 713, Ctr = 38), leadership is actively involved in supporting the organization (Q47.3) (Cor = 779, Ctr = 42) and so the institution integrates public responsibility into efforts of improving performance (Q13.3) (Cor = 764, Ctr = 39) and it is the senior leaders of the organization who create an environment which encourages learning (Q10.3) (Cor = 712, Ctr = 39). The same group believe that the leaders of the institution communicate the significance of continuous improvement and quality (Q20.3) (Cor = 688, Ctr = 29) and they continually use controls to evaluate the progress of students in short term and long term goals (Q22.3) (Cor = 745, Ctr = 41) and in this way the governance system of the organization ensures responsibility of the personnel and the teaching staff (Q12.3) (Cor = 645, Ctr = 33).

Consequently, these students maintain that the leaders of the institution continuously control the organization's performance to evaluate it in relation to the institution's competitors (Q21.3) (Cor = 693, Ctr = 29) and the organization sustains the efforts of empowering the local communities (Q48.3) (Cor = 703, Ctr = 36) and establishes key measures to handle dangers concerning its programs (Q32.3) (Cor = 598, Ctr = 27). All these result in the system of governance of the organization ensuring the protection of the community's interests (Q17.3) (Cor = 602, Ctr = 27). Furthermore, the students indicated declare that the senior leaders use their performance measures to set future directions (Q24.3) (Cor = 835, Ctr = 57), resulting in the governance system ensuring the protection of the students' interests (Q14.3) (Cor = 832, Ctr = 54) and subsequently the organization integrates public responsibility into efforts of improving performance (Q33.3) (Cor = 834, Ctr = 56). Besides, the same students claim that the institution applies and sustains the right behavior of the citizen towards it (Q44.3) (Cor = 564, Ctr = 23), and tries to serve as a model in whatever has to do with public responsibility, morality and citizenship (Q45.3) (Cor = 564, Ctr = 23).
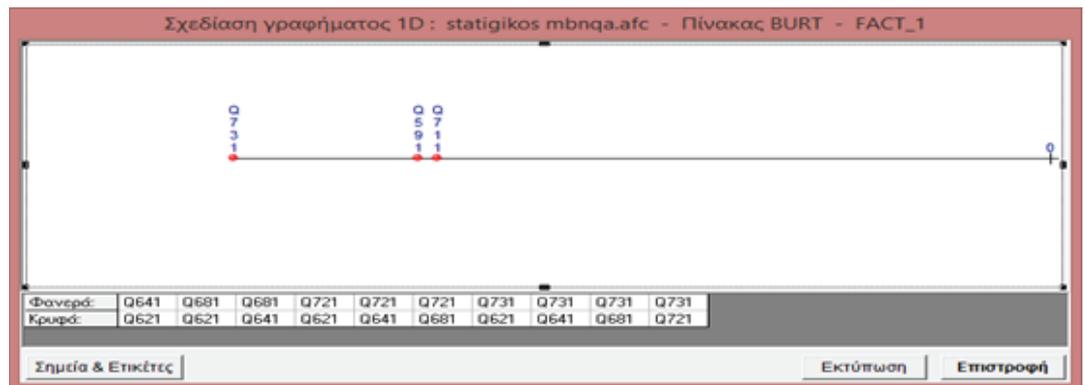
Figure 4: 1st Factorial Axis Strategic Planning.

3.2. Criterion 2-Strategic Planning

Based on the rates appearing on the histogram of characteristic values the significance percentage of the first factorial axis is 52.18%, and of the second it is 21.03%. These variables are extracted according to the criterion of correlation ($Cor \geq 200$, criterion 2) and the criterion of contribution ($C\tau r \geq \frac{1000}{94} \approx 10.6 \approx 11$, criterion 3) [10].

More specifically, on the left of the first factorial axis e_1 which has a significance percentage of 52.18% emerges the group of students who think quite negatively of the quality dimensions in Tertiary Education and relatively to the criterion of Strategic Planning. The position that this group maintains is that the organization does not use key measures and indexes to monitor the progress regarding action plans (Q73.1) (Cor = 995, Ctr = 57), does not allocate resources necessary for the implementation of these action plans (Q72.1) (Cor = 995, Ctr = 58). According to the specific group's opinion the organization does not convert its strategic targets into short term and long term action plans to achieve its goals (Q68.1) (Cor = 999, Ctr = 58) and its long term vision does not guide every day's activities (Q64.1) (Cor = 999, Ctr = 58) nor do the strategic targets of the institution confront directly the challenges described in its organizational profile (Q62.1) (Cor = 999, Ctr = 58).

The students specified believe that the process of strategic planning of the establishment does not take into consideration the weaknesses and strengths of the competitors (Q59.1) (Cor = 967, Ctr = 44) nor is the progress of these action plans constantly assessed by the institution (Q71.1) (Cor = 947, Ctr = 41).

On the second factorial axis e_2, which has a significance percentage of 21.03% the group of students appears who think quite positively of the quality dimension in Tertiary Education regarding Strategic Planning (Figure 5).

This group of students who claim that the organization converts its strategic goals into short term and long term action plans to achieve its goals (Q68.3) (Cor = 793, Ctr =
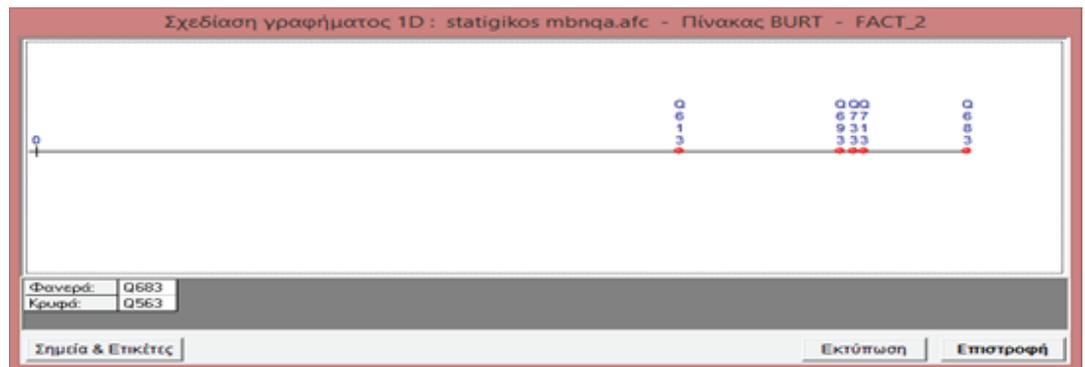
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Figure 5: 2nd Factorial Axis Strategic Planning.

48), collects and analyzes data and information relevant to its process of strategic planning (Q56.3) (Cor = 793, Ctr = 48) and the progress of these action plans is continuously evaluated by the institution (Q71.3) (Cor = 729, Ctr = 38). In addition, the establishment uses key measures and indexes to monitor progress relating to action plans (Q73.3) (Cor = 748, Ctr = 37) and the strategic plans are translated into specific conditions for every working group or department (Q69.3) (Cor = 741, Ctr = 36). Besides, these students maintain that the organization determines timetables for the achievement of strategic targets (Q61.3) (Cor = 681, Ctr = 30).

3.3. Criterion 3-Focus on Students-Customers

The values appearing on the histogram of eigenvalues determine the first factorial axis with a significance percentage of 51.34% and the second with a percentage of 23.27%.

To further elaborate, on the left of the first factorial axis e_1 which has significance percentage of 51.34 there is this group of students who have quite a negative opinion on the quality dimension of Tertiary Education in the Focus on Students- Clients criterion. In more detail, on the left of the first factorial axis e_1 the group of students who maintain that the institution does not search for information from personnel and teaching staff to build long term collaborations with students and interested parties (Q112.1) (Cor = 938, Ctr = 37), and the organization's programs does not connect with the community/society's needs (Q92.1) (Cor = 938, Ctr = 37). Furthermore, these students think that the institution does not count in total and international conditions when drafting its programs (Q100.1) (Cor = 930, Ctr = 38), nor does it form active relations with students and interested parties (Q101.1) (Cor = 930, Ctr = 37), or forms active relationships to strengthen the performance and the expectations of the students (Q103.1) (Cor = 933, Ctr = 38). Moreover, these particular students believe that the institution does not use 'percentages of dropping out of University', or data of 'continuous absence' and 'complaints' as methods of determining satisfaction/
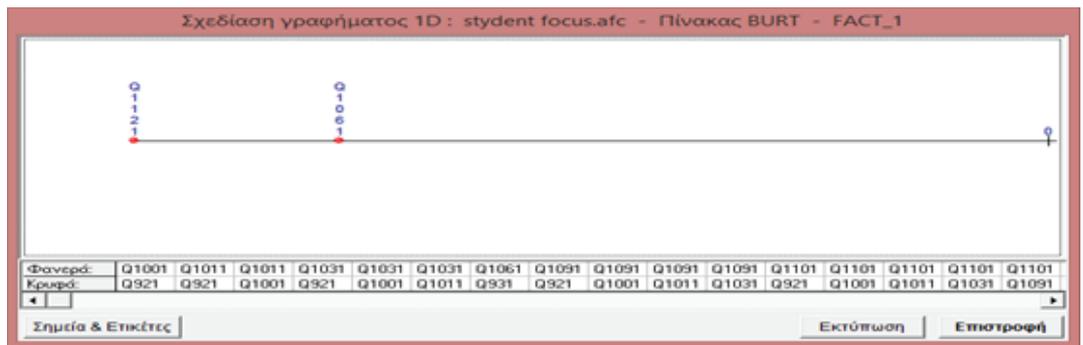
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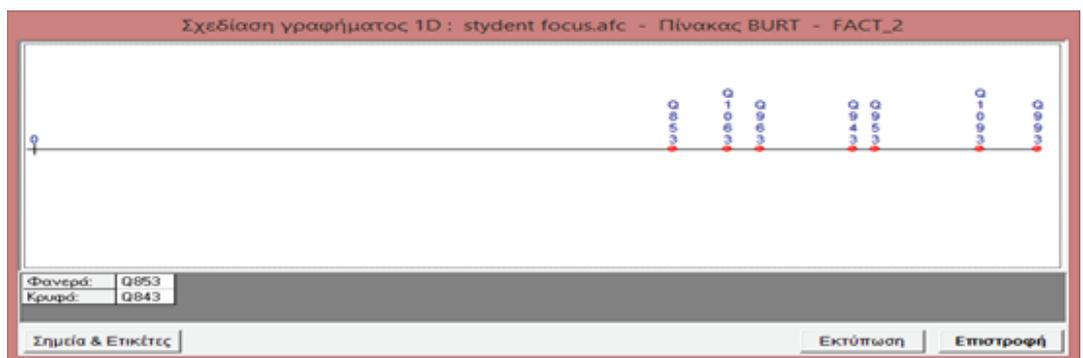**Figure** 6: 1st Factorial Axis Focus on Students – Clients.

Figure 7: 2nd Factorial Axis Focus on Students-Clients.

dissatisfaction of student/ interested party (Q109.1) (Cor = 933, Ctr = 37), does not use data of satisfaction/ dissatisfaction to determine the limitations due to value, cost and income (Q111.1) (Cor = 933, Ctr = 38), has not established a process which ensures the efficient and quick settlement of complaints (Q106.1) (Cor = 956, Ctr = 34).

The second factorial axis e_2 has a significance percentage of 23.27%. The group of students we distinguish on this axis sees quality dimensions in Tertiary Education quite positively concerning the Focus on Students-Clients criterion.

More specifically, the students of this group who are discerned on the right of the second factorial axis believe that the institution takes into account changes in the methods of providing educational services (Q99.3) (Cor = 779, Ctr = 32), uses 'percentages of discontinuation of University studies', data of 'continuous absence' and 'complaints' as a method of defining satisfaction/dissatisfaction of student / interested party (Q109.3) (Cor = 746, Ctr = 34), pays regular visits to the community and to factories (Q95.3) (Cor = 756, Ctr = 35) and also to junior and senior high schools (Q94.3) (Cor = 811, Ctr = 44) in order to promote the University and its programs. Additionally, the students of this particular group think that the establishment uses feedback from its graduates to evaluate its programs and the services it offers (Q96.3) (Cor = 796, Ctr = 42), conducts regular student surveys for better listening and learning (Q85.3) (Cor

Figure 8: 1st Factorial Axis_Measurement, Analysis and Knowledge Management.

= 752, Ctr = 40). Finally, they claim that the institution analyzes students' complaints to improve its services (Q84.3) (Cor = 752, Ctr = 40).

3.4. Criterion 4-Measurement, Analysis and Knowledge Management

On the basis of rates appearing on the histogram of eigenvalues the significance percentage of the first factorial axis is 39.82%, and of the second it is 23.18%. The above mentioned variables are extracted according to two criteria, correlation ($Cor \geq 200$, criterion 2) and contribution ($C\tau r \geq (1000/91) \approx 10.9 \approx 11$, criterion 3) [10].

To further clarify, on the right of the first factorial axis e_1 (Figure 8) which has a significance percentage of 39.82%, there is this group of students who claimed that the organization does not guarantee that its people stay in close contact with the modified educational needs and directions (Q138.1) (Cor = 787, Ctr = 43), and in no case does it collect or utilize information on mistakes, complaints and customer dissatisfaction (Q119.1) (Cor = 712, Ctr = 56).

Likewise the same group of students maintains that the organization does not guarantee that computer hardware or software is safe and user friendly (Q131.1) (Cor = 785, Ctr = 50) nor do the results of the performance analysis of the institution contribute a lot to the inspection of senior leaders and to strategic planning (Q127.1) (Cor = 783, Ctr = 50), and there is no possibility for the data and the information of the establishment to be accessible to its partners (communities and interested parties) (Q130.1) (Cor = 683, Ctr = 51) and this is why the performance analysis of the organization does not include technology projections (Q123.1) (Cor = 734, Ctr = 59). Finally, the organizational system of the organization's knowledge does not focus on identification and exchange of the best practices (Q143.1) (Cor = 760, Ctr = 50).

On the second factorial axis e_2, which has a significance percentage of 23.18%, we see the group of students who view favorably the quality dimensions of Tertiary Education on the Measurement, Analysis and Knowledge Management criterion.
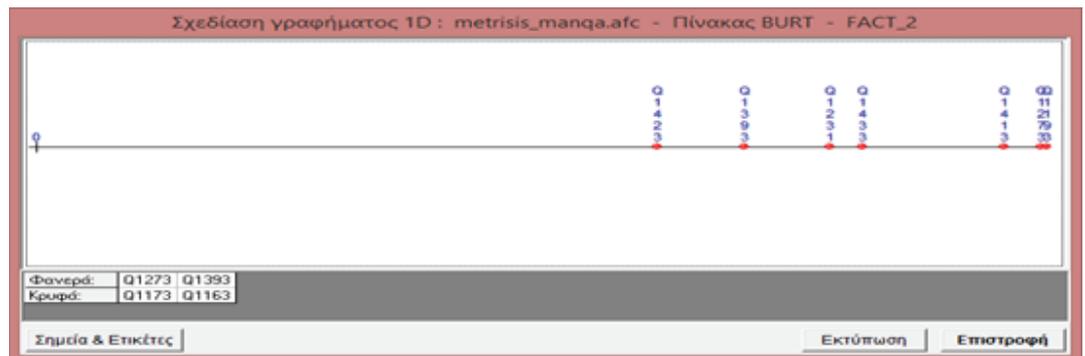
Figure 9: 2nd Factorial Axis_Measurement, Analysis and Knowledge Management.

In more detail, on the right of the second factorial axis e_2 (Figure 9) there is this group of students, who think that the institution collects and utilizes information on mistakes, complaints and customer dissatisfaction (Q119.3) (Cor = 718, Ctr = 52). The same students also believe that the results of the performance analysis of the establishment contribute a great deal to the inspection of senior leaders and on the strategic planning (Q127.3) (Cor = 336, Ctr = 29). Besides, they claim that the organization uses information systems to connect its programs and services with student results (Q117.3) (Cor = 366, Ctr = 29), that the center of knowledge management is in the knowledge people need to do their job (Q141.3) (Cor = 465, Ctr = 42). Moreover, they maintain that the organizational system of the knowledge of the organization focuses on identifying and exchanging the best practices (Q143.3) (Cor = 441, Ctr = 39) and that the analysis of the organization performance analysis includes technology projections (Q123.3) (Cor = 743, Ctr = 51).

Furthermore, the above mentioned students claim that the institution uses data and information to support decision making on organizing (Q116.3) (Cor = 396, Ctr = 27) and continuously develops innovative solutions which add value to its students (Q139.3) (Cor = 451, Ctr = 38). Finally, they believe that on the knowledge needed to improve processes, programs and services (Q142.3) (Cor = 545, Ctr = 33).

3.5. Criterion 5-Focus on Personnel and Teaching Staff

Based on the rates on the Eigenvalue histogram the significance percentage of the first factorial axis is 42.81% and of the second it is 22.13%. The variables mentioned are extracted according to the criteria of correlation ($Cor \geq 200$, criterion 2) and contribution ($C\tau r \geq \frac{1000}{168} \approx 5.9 \approx 6$, criterion 3) [10].

More specifically, on the left of the first factorial axis e_1 a group of students appears. The students of this group believe that the services, the benefits and the policies of the institution are not adapted to the needs of its various workforce (Q193.1) (Cor = 565, Ctr

= 15) nor does the organization provide diverse psychological and cultural activities to the teaching staff and its personnel (Q192.1) (Cor = 565, Ctr = 15), nor is the participation of personnel and teaching staff in the improvement of health, security and ergonomics in the workplace ensured (Q184.1) (Cor = 603, Ctr = 10).

Furthermore, the students emerging on the left of the axis assert that the establishment does not guarantee the readiness of the workplace in emergencies or catastrophes (Q187.1) (Cor = 643, Ctr = 16). Besides, this group thinks that the organization in order to help the teaching staff and the personnel fully exploit their potential does not use individual development plans regarding learning and career goals for each person separately (Q181.1) (Cor = 611, Ctr = 18).

*I*n any case the senior leaders and supervisors of the institution do not help the personnel and the teaching staff to reach their learning goals and develop regarding their work and career (Q180.1) (Cor = 634, Ctr = 16) and the institution does not provide various entertainment and cultural activities to its personnel and teaching staff (Q191.1) (Cor = 592, Ctr = 17), nor does it provide various support services within the faculty (e.g. counseling, career development, day care center) (Q191.1) (Cor = 590, Ctr = 17) nor are the basic factors of the organization departmentalized for its diverse work force (Q189.1) (Cor = 651, Ctr = 19).As we move to the right we meet the position of those students who state that the institution established basic factors which affect prosperity, satisfaction and personnel and teaching staff's motivation (Q188.1) (Cor = 665, Ctr = 16).

Additionally, the students of this group believe that the organization does not use formal or informal mechanisms to direct the personnel and the teaching staff to the achievement of learning goals and goals of work and career development (Q177.1) (Cor = 674, Ctr = 15), nor does it continuously ask teachers and the personnel to make problems in their workplace known (Q186.1) (Cor = 657, Ctr = 19).

For the specific students the institute does not offer support to their personnel and teaching staff with services, benefits and policies (Q190.1) (Cor = 638, Ctr = 15). Besides, students claim that the institute does not guarantee the readiness of the workplace in emergencies or catastrophes (Q187.1) (Cor = 648, Ctr = 16). These students are juxtaposed with the group of students positioned on the right of the first factorial axis. The latter maintain that the organization asks constantly the teaching staff and the personnel to report the problems in their work environment (Q186.3) (Cor = 593, Ctr = 15) and utilizes educational and training programs addressed to the teaching staff and the personnel both within and outside the organization (Q169.3) (Cor = 596, Ctr = 15).

Subsequently, on the right of the second factorial axis e_2 (Figure 11) there is the group of those students whose statements build this particular axis. In more detail,
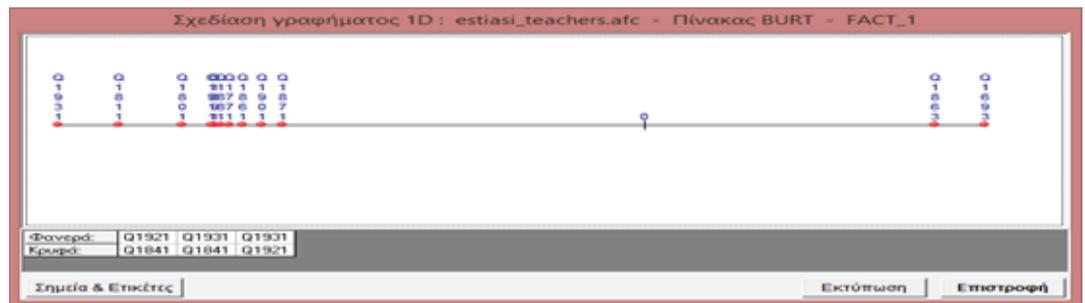
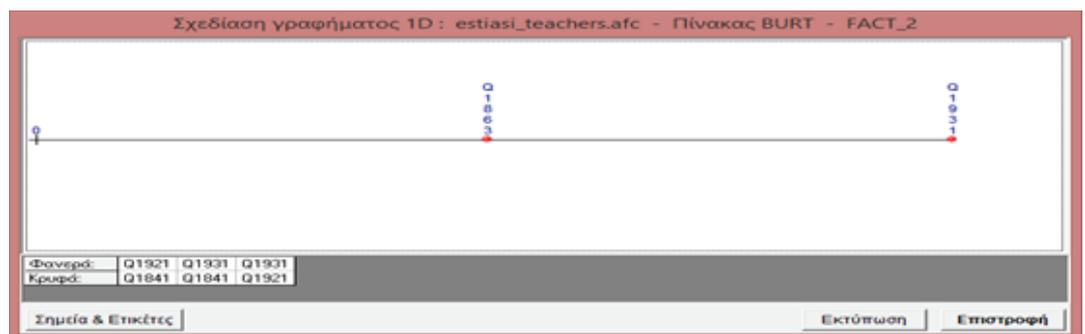**Figure** 10: 1st Factorial Axis Focus on Personnel and Teaching Staff.

Figure 11: Factorial Axis Focus on the Personnel and the Teaching Staff.

the students who state that, while the organization asks constantly the personnel and the teaching staff to report the problems of the working environment (Q186.3) (Cor = 330, Ctr = 16) the services, the benefits and the policies of the institute do not adapt to the needs of the diverse workforce (Cor = 318, Ctr = 16) nor does the establishment provide various entertaining and cultural activities to its personnel and the teaching staff (Q192.1) (Cor = 318, Ctr = 16) and the participation of the personnel and the teaching staff in the improvement of the health, security, protection and ergonomics of the workplace is not guaranteed (Q184.1) (Cor = 318, Ctr = 16). At this point it has to be stated that the abovementioned statements emerge on the first factorial axis (Figure 10) and there they present higher Cor and lower Ctr. On the contrary, on the second factorial axis the statements show higher Ctr and lower Cor (Figure 11). Consequently, the abovementioned views express higher correlation with the first factorial axis and are interpreted to a greater extent by it, while they contribute more to the formation of the second axis.

3.6. Criterion 6: Process Management

On the basis of the rates recorder on the Eigenvalue Histogram the significance percentage of the first factorial axis is 46.21%, of the second it is 20.74%. The said variables are extracted according to two criteria, correlation ($Cor \geq 200$, criterion 2) and contribution ($C\tau r \geq \frac{1000}{66} \approx 15.1 \approx 16$, criterion 3) [10].
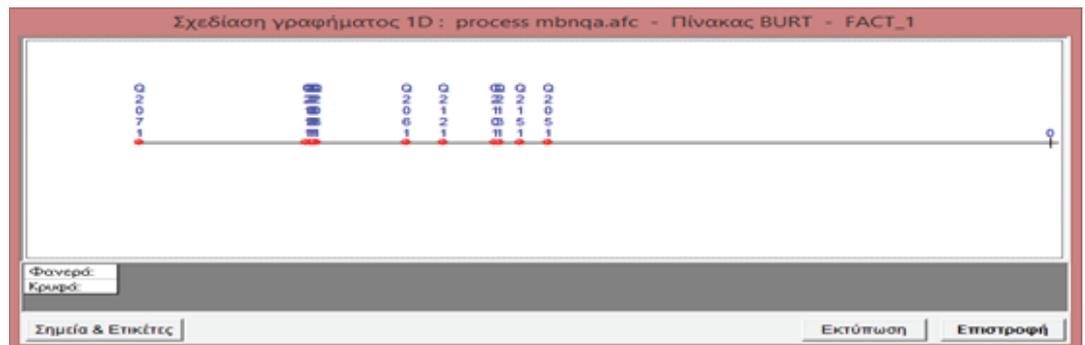
Figure 12: 1st Factorial axis Focus on Personnel and Teaching Staff.

To further elaborate, on the first factorial axis, which expresses 46.21% of the total variance of data the second group of students is discerned, who believe that the organization does not dispose effective ways of determining and ensuring its basic SS (support processes-SP) (Q207.1) (Cor = 783, Ctr = 74), that the said institution fails to integrate new technology and organizational knowledge regarding its SS (Support processes –SP) (Q211.1) (Cor = 888, Ctr = 48), and it does not integrate data from the students, the teaching staff, the personnel and the interested parties to determine basic conditions SP either (Support processes –SP) (Q209.1) (Cor = 948, Ctr = 69) nor does it dispose effective elementary SP (Support processes –SP) to support its LCP (learner centered processes-LCP) (Q208.1) (Cor = 939, Ctr = 62).

The students, who belong to the above mentioned group, maintain that the institution does not persistently improve its LCPs (learner centered processes-LCP) to maximize students' success and improve its educational programs (Q206.1) (Cor = 913, Ctr = 60), that it does not use basic performance measures to control and improve its SP (Q212.1) (Cor = 884 Ctr = 46) nor does it plan its SP to respond to the already determined elementary conditions (Q210.1) (Cor = 904, Ctr = 46).

In addition, the group of students in question maintains that the organization does not make an effort to minimize the total expenditure related with process and performance control and SP (Q213.1) (Cor = 838, Ctr = 44), nor does it constantly improve its SP to achieve better performance and be informed of the organizational needs (Q215.1) (Cor = 854, Ctr = 40) or use basic performance measures to control and improve its LCP(Q205.1) (Cor = 899, Ctr = 46).

On the right of the second factorial axis e_2 (Figure 13), which expresses 20.74% of total variance of data a group of students is positioned whose statements form this particular axis. The students of the group in question are of the opinion that the organization prevents the mistakes and repeats the work of planning its SP (support processes – SP) (Q214.3) (Cor = 843, Ctr = 111), integrates data from students, teaching staff, personnel, and interested parties to determine essential conditions of SP (support
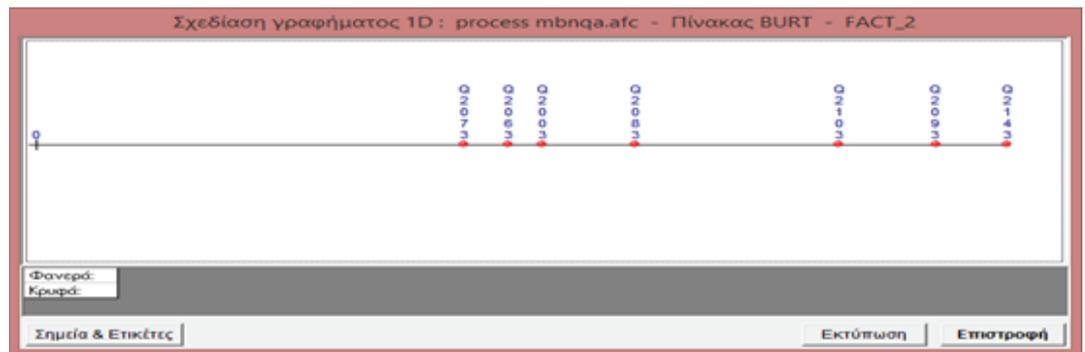
Figure 13: 2nd Factorial Focus on the Teaching Staff and the Personnel.

services – SP) (Q209.3) (Cor = 786, Ctr = 121), plans its SP (Support processes – SP) to respond to the basic preconditions already defined (Q210.3) (Cor = 897, Ctr = 118), disposes effective basic SP (Support processes-SP) to support its LCP (learner centered processes – LCP) (Q208.3) (Cor = 825, Ctr = 88). This group thinks that the LCP of the organization take into consideration the learning and developmental needs of the students to maximize their success (Q200.3) (Cor = 736, Ctr = 64) and the organization continuously improves its LCP to maximize the students' success and improve its educational programs (Q206.3) (Cor = 774, Ctr = 74), offering effective ways of determining and ensuring its basic SP (Q207.3) (Cor = 758, Ctr = 76).

4. Conclusions

In this study and based on the empirical research on the basis of Scale Criteria Analysis derived from MBNQA Excellence Model.

Following the research, which was conducted in three Pedagogical Departments of Greek Universities, an attempt is made to analyze and present the most important findings stemming from the responses of students. After the application of MBNQA Excellence Model as self-evaluation tool the important negative and positive evidence which emerge are assessed.

As it is commonly admitted and proven by a number of researches, the opinions and views affect to a great extent the attitudes of social agents, students in our case, in every aspect not only of personal but also of social and professional life. These attitudes in turn, form behavior because they create a-priori reactions which are either for or against an issue, such as Assessment, Self- Assessment and Total Quality Management (TQM) in Tertiary Education. For this reason, the goal of the present research is to charter the factors and components constituting the concept of Quality, the adaptation of Total Quality Management (TQM) in Tertiary Education, based on views, opinions and attitudes of prospective teachers, who attend the Pedagogical Training program

of ASPETE. Furthermore, the goal of Self-assessment of equivalent organizations was also set.

In Greece researches of investigating students' attitudes on applying TQM principles in Tertiary Education and Self-assessment of ASPETE departments using Excellence Models have not been conducted. On the contrary, there is a plethora of similar studies in Tertiary Education Departments abroad. The lack of such researches motivated the present study.

In the present paper the Malcolm Baldrige Excellence Framework (MBNQA) Model of Excellence were used and applied as assessment tools in Tertiary Education.

More specifically, the present research using the Reliability Model *Cronbach's Alpha* controlled and assessed the scale based on MBNQA model of Excellence, proposed by [2]. The use of the scale based on MBNQA model of Excellence studies empirically the degree to which Quality in Tertiary Education can be recorded, analyzed and explained in light of the Baldrige Framework Criteria. And the assessment and certification of the scale in question as a measurement tool is of overriding importance.

Analysis of the results based on the scale criteria based on the Excellence Model MBNQA: The Leadership criterion is the most essential condition to achieve excellence because effective leadership forms educational excellence regarding excellence performances at University [2]. According to [2] effective leadership has both the possibility and the ability to make changes in the system and guides every system of strategy and every process of excellence achievement. In the present research under Leadership criterion and taking into consideration the students asked and based on the quality of items as the quality emerges from Criterion 3, the integration of public responsibility into efforts of improving performance is the most important parameter, which appears as the primarily differentiating element for the public's attitude. In greater detail, those who view negatively integration by the organization, of public responsibility into efforts of improving performance, stress the lack of awareness on the organization's behalf in matters of public interest and express their strong belief that its leadership does not actively support the organization due to the fact that there is total lack of the public's interest in the institute's future programs and its entire contribution. Consequently, the students' opinion on the little/defective leadership's ability to meet its public and social responsibility becomes obvious.

The students, who view positively the integration of public responsibility in efforts of improving the institution's performance, believe that its governance system ensures the protection of its interests. Similarly they think that all the leaders of the organization are close to the entirety of the manpower including students, administration and teaching staff and claim that the measurement of performance of the latter are the basis on which future directions can be drawn. The students' opinion that the

senior leaders of the Organization (Rector Authorities, Deans, and Chairpersons of the Departments) lead the institute so as it lives up to its social responsibilities with respect to the manpower developing actions which guide the organization and contribute to its viability is once more obvious. This is exactly the reason why the need for effective administration/leadership and commitment to quality has been underlined by the gurus of quality [4, 7, 8].

The second criterion, the Organization's Strategy the conversion of strategic goals into short term and long term action plans to achieve the Organization's objectives is a parameter which differentiates students diametrically. In more detail, the students who have a negative attitude claim that the institute does not convert its strategic goals into short term and long term action plans to achieve those goals which do not confront directly the challenges described in its organizational profile. These students note that it is not possible for the long term vision of the organization to lead each day's activities. The above mentioned negative situation regarding the Institute's Strategy is due to the fact that the organization does not distribute necessary sources to implement action plans. Therefore, the viewpoint of the students' evaluation that the organization is not in a position to enact that strategy and succeed in its goals converting them into action plans, becomes evident.

A group of students think positively of the ability of the Institution to convert its strategic goals into short term and long term action plans in order to achieve its goals and evaluate the progress of these action plans collecting and analyzing relative data and information for the strategic planning process. The above mentioned students think that the organization's strategy allowing it to convert its strategic goals into short term and long term action plans. Besides, the role of strategic planning in the improvement of quality has been stressed by quality gurus like [3, 8] and especially by [7].

As to the third criterion, Focus on Students-Clients there is again differentiation of groups having positive or negative opinions. There is not however a parameter which becomes a point of controversy. The students with negative attitude maintain that the institute does not take into consideration total and international conditions unrelated to the community/society's needs in developing programs. In any case the organization does not build active relationships with students and interested parties and does not enhance performance and students expectations. Furthermore, it does not use modern technologies (internet) to determine satisfaction/dissatisfaction, it does not use satisfaction/dissatisfaction data to determine limitations due to value, cost and revenue and it does not use 'percentages of discontinuation of University studies' and data of 'continuous absence' and 'complaints' as methods of defining satisfaction/dissatisfaction of students/ interested parties. Consequently, the students

of this group claim that the organization does not take into account the expectations of clients or their degree of satisfaction, it does not develop a relationship with them and it can be concluded that the 'voice' of the client is not heard.

The students who have a positive view of Focus on Students-Clients think that the institution presents very positive actions leading to continuous improvement, by paying regular visits to junior and senior high schools to promote the University and its programs, by using feedback from its graduates to evaluate its programs and services, by analyzing students' complaints aiming at improving its services and by conducting regular students' researches for better hearing and learning. The students with a positive view describe that the institution listens to the client's 'voice', collects information on the clients' satisfaction or dissatisfaction from the services it offers, which constitute a basis for improvement. The emphasis on client's satisfaction is a very essential element of quality as [6, 7] underline.

As to criterion 4, namely Measurement, Analysis and Knowledge Management the collection and utilization by the organization of information on mistakes, complaints and client dissatisfaction constitute a parameter which clearly differentiates the students. The students who have a negative attitude believe that the institution does not collect or utilize information on errors, complaints and client dissatisfaction because the performance analysis of the organization does not include technology projections as the institution is not in a position to ensure that the computer hardware and software are safe and user friendly and because the data and information of the organization is not accessible to its partners (communities and interested parties). Therefore, there is not an effective knowledge management or management of information technology. Nor is there an effective analysis and data and information evaluation which will lead to the improvement of the institution's activities.

The students who view positively whether the institute collects and utilizes information on errors, complaints and client dissatisfaction think that the institute's organizational knowledge system focuses on identifying and exchanging the best practices. This happens because the focal point of knowledge management is in the knowledge people need to do their job and it is the institute that continuously develops innovative solutions which add value to the students. The students of this group believe that the organization is in a position to ensure data and information quality regarding interested parties and thus guarantee its effective and proper operation.

The fifth criterion concerning the Focus on Personnel and Teaching Staff, whether the teaching staff notifies problems of their work environment to the organization is the parameter which clearly differentiates the students. The students with a negative attitude on the matter claim that the organization does not ask the personnel and the teaching staff to state problems in their work environment. The institution does

not use individual development plans dealing with learning and career goals of each one separately in order to fully exploit their potential. The institute does not offer various support services within the faculty (e.g. counseling, career development, day care center), because the basic factors of the institute are not departmentalized for its diverse work force. Therefore, the view of the students that there is not a clear involvement of the man power in the operation of the organization and the work force does not enjoy a supportive work environment which could reach the maximization of their abilities and possibilities becomes evident.

The students with a positive attitude maintain that the organization takes care of the notification of the teachers' and the personnel's problems through searching and using data from personnel, teaching staff and their superiors who supervise them regarding their educational and training needs. The ultimate goal is to utilize educational and training programs of personnel and teaching staff within as well as outside the organization. The group of these students makes it clear that the institution pays proper attention to its people and their needs, and takes care of their education and training in order to maximize their performance.

Finally, concerning the sixth criterion examined, the Process Management there is again a strong differentiation between groups of students with a negative or a positive attitude without there being one parameter leading to a point of conflict. More specifically, the students with the negative opinion think that the institution does not have effective ways of determining and ensuring its basic SP (support processes-SP) and does not integrate data from students, teaching staff, personnel or the interested parties to determine effective basic SP (support processes-SP) or support its LCP (learning centered processes – LCP) or improve them to maximize student success and improve its educational programs. The group with the negative attitude considers every effort of the institute to plan, implement and utilize its processes, a failure.

The group of students with the positive attitude is a proponent of the view that the organization deters mistakes and repeats its SP planning work (support processes-SP), that it integrates data from students, teachers, the personnel and the interested parties in order to determine basic SP conditions (support processes-SP), plans its SP (support processes-SP) to meet basic conditions already determined and possesses effective basic SP (support processes-SP) to support its LCP (learning centered processes – LCP). The same group sees planning, implementation and utilization of the organization's processes very favorably.

Finally, it should be mentioned that none of the above criteria seems to be affected by demographic factors. In more detail, no criterion is differentiated based on gender, specialization or age of the prospective teachers who were examined.

References

[1] J. C. Ah-Teck and K. Starr, "Principals' perceptions of "quality" in Mauritian schools using the Baldrige framework," Journal of Educational Administration, vol. 51, no. 5, pp. 680–704, 2013.

[2] M. A. Badri, H. Selim, K. Alshare, E. E. Grandon, H. Younis, and M. Abdulla, "The baldrige education criteria for performance excellence framework: empirical test and validation," *International Journal of Quality and Reliability Management* , vol. 23, no. 9, pp. 1118–1157, 2006.

[3] W. E. Deming, Out of the Crisis, MIT Center for Advance Engineering, Cambridge, University Press, 1986.

[4] H. Eriksson and J. Hansson, "The impact of TQM on financial performance," Measuring Business Excellence, vol. 7, no. 1, pp. 36–50, 2003.

[5] H. Eriksson, "Experiences of working with in-company quality awards: A case study," TQM Magazine, vol. 15, no. 6, pp. 397–407, 2003.

[6] A. V. Feigenbaum, Total Quality Control, NcGraw-Hill, New York, 1991.

[7] J. M. Juran, Juran on Planning for Quality, The Free Press, New York, 1988.

[8] P. Grosby, Quality is Free, NcGraw-Hill, New York, 1979.

[9] D. Karapistolis, (2010). Software Method of Data Analysis MAD.

[10] Karapistolis, (2014). Multivariate Statistical Analysis, Ed. Athanasios Altintzis.

[11] P.-M. Lee, "Sustaining business excellence through a framework of best practices in TQM," The TQM Magazine, vol. 14, no. 3, pp. 142–149, 2002.

[12] G. Mouradian, The quality revolution, USA: University Press of America, 2002.

[13] B. D. Ruben, T. Russ, S. M. Smulowitz, and S. L. Connaughton, "Evaluating the impact of organizational self-assessment in higher education: The Malcolm Baldrige/Excellence in Higher Education framework," Leadership and Organization Development Journal, vol. 28, no. 3, pp. 230–250, 2007.

[14] L. Porter and S. Tanners, Assessing Business Excellence (2hd ed.), Butterworth-Heinemann, Oxford, 2004.

[15] B. D. Ruben, a). Excellence in higher education guide 2007-08e: An integrated approach to assessment, planning and improvement for colleges and universities, National Association of College and University Business Officers, Washigton, 2007.

[16] B. D. Ruben, b). Excellence in higher education guide 2007-08: An integrated approach to assessment, planning and improvement for colleges and universities. Facilitators Guide, National Association of College and University Business Officers, Washington, 2007.

[17] B. D. Ruben, c). Excellence in higher education guide 2007-08: An integrated approach to assessment, planning and improvement for colleges and universities.

Workbook and Scoring Guide, National Association of College and university Business Officers, Washington, 2007.

[18] V. M. Rao Tummala and C. L. Tang, "Strategic quality management, Malcolm Baldrige and European quality awards and ISO 9000 certification: Core concepts and comparative analysis," International Journal of Quality & Reliability Management, vol. 13, no. 4, pp. 8–38, 1996.