

Analysis of the Implementation of ISO 9001:2015 in Extension Services of the State Universities and Colleges in Region III Using Multivariate Linear Regression

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Abstract - It has been suggested that state universities and colleges increase the quality of their offerings, especially extension services. Implementing ISO 9001:2015, or the Quality Management System, is one of the initiatives. The International Organization for Standardization created this international standard, which is applicable to practically all sorts of organizations, including universities. Central Luzon State University and Tarlac State University are the two SUCs in Region III that have been implementing the ISO 9001 for more than three years. Though the system was already implemented for three years or more, there is a need to monitor and sustain the implementation. This study proves that sustainability is more difficult than implementation. Some of the personnel vary vis-a-vis the established system according to what is more convenient to them. The researcher observed the University does not control some documents. Documented Information in the international standard. The implementation brought benefits to the university, especially in the delivery of their extension services. They were able to establish a system for planning, implementation, monitoring, and evaluation that generally conforms to the clauses (requirements) of ISO 9001:2015 expressed in the PDCA Cycle. This was also supported through the interview with the co-operators (clients) of extension services. However, as to the satisfaction of extension, service providers must be given attention in terms of support on resources.

Index Terms - ISO 9001:2015, Quality Management System, PDCA, State Universities

INTRODUCTION

The ISO 9001 Quality Management System is a necessary condition for an organization's success [1]. The organization's strategy, motivations, policies, and goals promote the voluntary implementation of this QMS [2].

Any firm should decide to deploy a quality management system (QMS) on a strategic level [3]. The construction and implementation of this system should take into account the uniqueness of each organization because it is based on several aspects such as specific goals, the provision of products and services, and the methods used [4].

According to [5,] the focus of accompanying should be on the client, and it should take into account their requirements and demands in order to keep a competitive advantage and remain in the market. Quality is certainly crucial, especially in a fast-changing environment [6]. One of the competitive tactics for enhancing business performance in a global market has been characterized as quality [7].

Higher education has a tremendous influence on society today. "The State shall defend and promote the right of all people to quality education at all levels," says Section 1 of Article 14 of the 1987 Philippine Constitution. Executive Order No. 607, section 1, is very precise. As part of the implementation of a government-wide quality management program, former President Gloria Macapagal Arroyo mandated in 2007 that all Executive branch departments and agencies, including SUCs and GOCCs, adopt the ISO 9001:2000 Quality Management System.

The implementation of ISO 9001:2015 as a condition for Performance-Based Bonus of government agencies, including SUCs, was also included by the Government Quality Management Committee under the Department of Budget and Management (GQMC, Memorandum Circular No. 2017-01).

ISO 9001 has been a trend for educational institutions, especially in State Universities and Colleges. This complies with the requirements of their oversight agencies. More than that, implementing ISO 9001 will help SUCs to improve their clientele focus and satisfaction in their core functions- instruction, research, and extension. In terms of extension services, this refers to the improvement of the services like capacity building training, technical assistance, and consultancy services. ISO 9001 certification can add up to strengthening the system and serve an end, not an end itself to attaining the desired outcomes in an educational institution. It helps SUCs not only in maintaining quality standards but attaining the set objectives for overall extension programs, projects, and activities improvement through QMS. ISO 9001 helps in a big way by understanding the institutional processes and procedures. Its standard establishes and maintains a documented quality system, increasing the level of confidence in meeting customer requirements in a systematic and comprehensive manner. It aids in the documentation of various processes, the introduction of objectivity into evaluation, and the emphasis on customer orientation and satisfaction.

More importantly, the implementation of the Quality Management System will ensure the satisfaction of clients and all statutory and regulatory requirements affecting an institution. These can be met by streamlining the internal process without compromising the quality of the products and services. It will also increase the morale of the personnel by realizing they are working for a certified international institution. Aside from these, more benefits can be gained by incorporating continual improvement in the culture of government institutions, especially state universities and colleges.

In the Region, selected SUCs have already started to work for ISO 9001:2015 certification. These are Bulacan State University, Central Luzon State University, Tarlac Agricultural University, and President Ramon Magsaysay Technological State University. Among other SUCs in the region, the Tarlac State University has successfully acquired three international standards; ISO 9001:2015, ISO 14000, and OHSAS. It is making its system an Integrated Management System (IMS).

The Nueva Ecija University of Science and Technology has also started implementing the ISO 9001:2015 in 2015 in one of its core functions; Extension Services. However, its administration decided to subject the whole institution to certification. Therefore, all core functions, including the instruction and research, will be included in the implementation.

This context provided an idea for the researcher to conduct a study to determine the existing quality management system that the Universities in Region III are currently implementing. Studying the case of the two big State Universities in the region, it will serve as a benchmark for the other universities planning to implement the quality management system. The researcher also looked, not only at the positive side but also at the negative side of the implementation. These will serve as the areas for continual improvement, which the standard also requires under Clause 10 [8]. Lastly, this study proposed a framework for the sustainable implementation of the Quality Management System in extension services of State Universities and Colleges.

The administration wants all faculty members to participate in extension services; however, not all faculty members are interested, who are divided by gender and age. With the parameters provided, this would be classified as a multivariate linear regression.

METHODS

The study was a descriptive case study. This was the most appropriate method since it allowed an in-depth analysis of a program, event, activity, or process such as ISO 9001:2015 implementation. It normally focused on a particular organization or specific individuals [9].

Particularly, this method was appropriate to determine the motivational factors, support of the administration, challenges encountered, satisfaction, and benefits of implementation.



FIGURE I RESEARCH LOCALE

The research was carried out at two State Universities in Region III that had been ISO 9001:2015 certified in their extension services department for the previous three years. These include Central Luzon State University (CLSU) in Muñoz, Nueva Ecija, and Tarlac State University (TSU) in Tarlac City, Tarlac.

There were two sets of instruments that served as an interview guide for the respondents. The researcher conducted an intensive review of related literature to understand the available information related to the statement of the problem. Likewise, these gave ideas to the researcher to conceptualize further the instrument of the study.

The instruments underwent a review by experts in the field of extension services and the quality management system. After the consultation, the comments, suggestions, and recommendations were incorporated into the instrument for revisions.

The researcher selected the respondents of the study into different groups, as shown in the table below:

TABLE I
DISTRIBUTION OF RESPONDENTS PER BARANGAY

Respondents	Target No. of Respondents	No. of Respondents
Executive Committee	One in every State University	2
Quality Management Representative	One in every State University	2
Extension Services Director	One in every State University	2
Faculty Members (Extension Service Providers)	Ten in each University	20
Clientele	Two in each University	4
Partner Agency/Institution	One representative from a partner institution of the University	2

The researcher gathered the primary data on the implementation through interviews, document reviews, and field observations. Permission to conduct these data collection methods was sought from concerned university officials, and respondents were identified. The respondents were the members of the ISO Core Team, Quality Circle members, faculty extensionists, members of the executive committee, and randomly selected beneficiaries of extension programs/projects.

Upon approval of the request to conduct data gathering, the interviews were conducted with the aid of an interview guide. Permission to record the interview process was requested from the respondents.

Secondary data were obtained from the document control officer and other sources. Moreover, other data, such as satisfaction survey results on the extension services and other relevant reports, were requested from the office of the Extension Services.

Data gathered were encoded into a spreadsheet and an appropriate statistical tool was applied.

From the data gathered from the accomplished interview, the researcher, with the help of his adviser/statistician, arranged, organized, tallied, and summarized all information for easy understanding and interpretation. The statistical tools were utilized to analyze the information collected from the respondents.

The description of ISO 9001:2015 of the two SUCs in terms of planning, awareness, involvement, implementation, monitoring, and continual improvement used frequency and percentage. Also, the description of ISO 9001:2015 of the partner institution and clientele in terms of awareness, extension projects, community involvement and participation, and support used frequency and percentage. In applying the Multivariate linear regression, there must be two or more independent variables which are the gender and age, the coefficient must also be present to determine the actual line for the regression state. The equation below must be satisfied $Y = b_0 + b_1x_1 + b_2x_2$.

RESULTS AND DISCUSSION

I. Description of ISO 9001:2015 According to the Two-State Colleges and Universities

The ISO 9001:2015 of the two SUCs was evaluated according to awareness, involvement, implementation, monitoring, and continual improvement.

TABLE II
REASONS FOR SUBJECTING THE UNIVERSITY TO ISO 9001:2015 CERTIFICATION

Respondents	Yes	Percentage
Requirement of oversight agencies	26	100
Need to improve quality of service	26	100
Expectations of Partner agency-institutions	26	100
To increase clientele satisfaction	26	100

Table II shows that all respondents answered that the following are the reasons for subjecting the university to ISO 9001:2015 certification: these are requirements of the oversight agencies, improvement of service, partner-agency expectation, and increased clientele satisfaction.

TABLE III
INITIATORS OF IMPLEMENTATION

Responses	Frequency	Percentage
Executive Committee	4	66.67
Administrative Council	2	33.33
Academic Council	0	0.00
Total	6	100.00

Table III shows that 4 out of 6 respondents mentioned that the initiators of QMS Implementation are the Executive Committee. This includes the University President and Vice Presidents. On the other hand, the remaining two (2) respondents said that the initiators were members of the administrative council. For the two (2) state universities, the members are the executive committee, deans, directors, student leaders, and faculty and staff president. No informant responded that the implementation was initiated by the academic council.

This is consistent with the requirements of Clause 5, Leadership of the ISO 9001:2015. The clause requires that the leaders of an organization shall show commitment to the implementation of the QMS.

TABLE IV
ADMINISTRATION DEMONSTRATES ADEQUATE SUPPORT IN THE IMPLEMENTATION OF QMS

Yes	No	Percentage
26	0	100.00

All respondents agreed that the administration showed adequate support to the implementation of the Quality Management System. This is parallel to Clause # 7, Support of the International Standard. The clause requires that the organization shall demonstrate support in the implementation of QMS in terms of, but not limited to, human resources, facilitators, environment, supplies, and materials.

TABLE V
SUPPORT OF THE ADMINISTRATION IN THE IMPLEMENTATION OF QMS

Respondents	Frequency	Percentage
Applied for consultancy services	26	100
Organized competent personnel for the positions required by the ISO 9001:2015	26	100
Provided necessary supplies for the preparation	26	100
Provided necessary office equipment and facilities	26	100

Table V shows that the administrator provided support in the implementation of QMS in terms of 1. Consultancy Services 2. Organized Competent Personnel 3. Necessary supplies for the preparation, and 4. Office equipment and facilities.

All respondents agreed that their respective universities conducted benchmarking with other universities as part of their preparation for the implementation. This is consistent with Clause #7, Organizational Knowledge of the International Standard.

The standard requires that the organization shall acquire the knowledge significant to the implementation of the quality management system.

The respondents of the study agreed that their universities disseminate properly the Quality Policy and Quality Objectives. The ISO 9001 requires that the organization shall set Quality Objectives by the official targets of the offices.

The method of dissemination used by SUCs in creating awareness of Quality Policy and Quality Objectives. Based on the data gathered, the three (3) identified methods are being used by the SUCs.

The international standard requires that the Quality Policy and Quality Objectives shall be properly disseminated to all personnel under the organization's control.

Extension programs are being implemented by the two SUCs. Among these is 1. Livelihood and Entrepreneurial Training 2. Business Administration and Management Training 3. Technical Vocational Training and 4. Technical Assistance on Local Development Planning.

All key informants (i.e., Executive Committee, Quality Management Representative, and Extension Director) are aware that the support for extension services is included in the operations manual, policies, and guidelines. On the other hand, 16 out of 20 faculty members are not aware that the support for the extension services is included in the manual, policies, and guidelines. Moreover, the remaining 4 faculty members are not aware that the supports for the extension services are not operations manual, policies, and guidelines.

All respondents agreed that there are clear systems procedures for the implementation of extension projects. Consistent with the requirements of the international standard, ISO 9001 requires that the organization shall set operational planning and control in all processes and activities under the organization's control.

All respondents agreed that their respective universities have a system for monitoring extension projects and programs.

TABLE VI
EXTENSION PROGRAMS OF THE UNIVERSITY BEING ACCESSED

Extension Programs	Frequency	Percentage
Livelihood and entrepreneurial training	5	83
Business administration and management training	4	67.67
Technical vocational training	6	100
Technical assistance in local development planning	3	50
Project planning and management	4	66.67
Physical and infrastructure development planning	2	33.33
Information and communications related training	4	66.67
Environmental protection and conservation	1	16.67
Health and wellness projects	3	50
Animal husbandry/livestock/ poultry/small ruminants	3	50
Crop production	2	33.33
Aquaculture	2	33.33
Disaster and calamity preparedness	2	33.33
Human rights	1	16.67
Moral recovery and values development	2	33.33
Women and children empowerment and welfare	3	50

Table VI shows the Extension Programs of the University that are being accessed by the clients. All respondents answered that technical vocational training and extension programs such as Livelihood and entrepreneurial training, Business administration and management training, Project planning and management, and Information and communications-related training are the most accessed.

The two universities provide all the necessary resources for the conduct of extension projects, except for starter kits, as per interviews with the clientele and partner institutions.

II. Steps Taken Towards the Implementation of ISO 9001:2015 in Extension Services

One of the State universities started as a farm school named the Central Luzon Agricultural School on April 12, 1907 (UNIVERSITY 1, n.d., "About UNIVERSITY 1," para. 2). Farming methods, agricultural mechanics, and homemaking arts were taught in this farm school. On December 31, 1950, it reached college status and offered a four-year curriculum on vocational agriculture. Finally, under Republic Act No. 4067 dated June 18, 1964, it attained the University status.

The need to improve the quality of services and increase the satisfaction of their clientele are also major reasons for the implementation of QMS, as mentioned by the key officials. The University President further cited that they also need to provide the expectations of relevant external parties.

The key officials of this State University agreed that the implementation of QMS was initiated by the Executive Committee (President and Vice Presidents). Furthermore, the plan was approved by the members of the administrative council.

The SU aspires to realize its vision and fulfill its goal by implementing ISO 9001. Its goal is to become a world-class research university for agricultural and allied subjects' science and technology. On the other hand, its mission is twofold: (1) to develop globally competitive, work-ready, socially responsible, and empowered human resources who value lifelong learning; and (2) to generate, disseminate, and apply knowledge and technologies for poverty alleviation, environmental protection, and sustainable development. These vision and mission statements, as well as quality policy declarations, are displayed on bulletin boards at the university's main entrance gate and on the UNIVERSITY 1 Administration Building's walls and flat-screen monitor.

III. Challenges Encountered in the Implementation of QMS

It was easy for them to convince the members of the executive committee and administrative council to implement ISO 9001:2015. However, they encountered difficulty in convincing the faculty and staff to do the same. The latter resisted because those people have a fear to change the work process which they have been dealing with for years. They had a fear that the implementation of ISO 9001 has many adjustments or even changes in their work routines. (Interview with the QMR, May 27, 2019). This supports the study of Morgan and Murgatroyd [10], who mentioned that the public sector is more resistant to change due to its commitment to regulation and enforcement of precedent and rules.

Another challenge for the implementation is the mobilization of the resources as the key informants of two state universities. They spend millions during the preparation and mobilized much personnel for the preparation resulting in interruptions of other curricular and extra-curricular activities. They spend almost Php 1,700,000 on certification and consultancy services. Moreover, additional supplies, equipment, furniture, and fixtures (e.g., cabinets, shelves, chairs) were procured to comply with the requirements of the international standards.

Interviews with key informants revealed the following challenges encountered during the implementation of the Quality Management System, to wit:

Resistance among faculty and staff in implementing QMS Standard. As revealed by the QMR during the interview, faculty and staff had an unfounded fear that following the QMS standard would alter their research activities and that there would be substantial adjustments and alterations in their workflow and the task itself.

Cost and other resources in implementing QMS in the University. Implementing the QMS required a substantial amount of money and a few personnel to be mobilized. In terms of financial resources, the University spent Php 700,000.00 for the purpose.

In terms of human resource requirements, a substantial number of personnel had been mobilized which affects the regular activities of the personnel concerned.

Aside from personnel, other logistics support such as office supplies, furniture, and fixtures were produced just to comply with ISO 9001:2015 requirements.

Duration of preparation. Preparation for ISO 9001:2015 Certification requires a longer period. In the case of SU, most respondents thought that two-year preparation is too long, affecting other important activities of the personnel of the University.

Re-instatement during the interview, one faculty member of SU expressed her observation that there are procedures and documents in extension services of which the faculty has inadequate awareness. This can be construed that State Universities encountered a challenge in Clause 7.3, Awareness of the ISO 9001, which states that the university shall ensure that persons doing work under the university's control are aware of the processes under the Quality Management System.

IV. Proposed Framework for Sustainable Implementation of QMS in Extension Services

Only a few authors have emphasized the importance of corporate culture in maintaining ISO 9001 [11]. The characteristics include teamwork, recognition, incentive programs, top management involvement, employee loyalty, and a strong desire for ongoing improvement.

The ISO 9001 implementation process, internal audit, certification audit, surveillance, ISO 9001 maintenance, and management review are all theoretically essential parts of organizational culture in ISO 9001 maintenance. For instance, ISO 9001 stresses process-based management [12], which demands collaboration and cooperation between diverse activities and departments (ISO, 2008). As a result, maintaining ISO 9001 needs partnership [13].

Meanwhile, top management, or the administrative council in the case of SUCs, is critical to ISO 9001 adoption since it requires them to accept certain aspects of organizational culture that are aligned with it. For example, they must pay attention to both internal and external clients (extension service providers) (i.e., extension beneficiaries and partners). To guarantee that the university's quality policy is effectively communicated, understood, implemented, and maintained, they must devote their full attention. On a regular basis, management must participate in project activities such as meetings, orientation, and training [14].

Personnel whose employment have a direct impact on the quality of extension services should be qualified to do so. They should have the appropriate education, training, abilities, and experience [8]. Furthermore, [15] and [8] discovered that both top management and lower-ranking employees should receive training. Extension service providers, for example, require training in order to increase their skills and knowledge. This is required before they can be assigned duties, obligations, or accountability by the administration.

Employee training was provided on a constant basis to improve people's comprehension of the ISO 9001, according to Unson [16], based on a case study conducted in an ISO 9001 certified Malaysian service firm.

In order to meet the needs of the extension service, the institution should also design and manage the work environment [8]. This is how the university should create and maintain good governance [17]. This criterion could be linked to the value of effective leadership, which is highlighted in quality management concepts. Internally, the administration should create and maintain an environment that encourages staff to contribute to the university's quality goals. For example, the university's head should cultivate a culture of trust and innovation. The participation and contribution of teachers and staff in the adoption of ISO 9001 should be recognized [8]. In line with this, [15] argues that the reward system is one of the most important success factors in ISO 9001 maintenance. Employees in ISO 9001-certified firms were rewarded with monetary bonuses, performance bonuses, promotions, and special increments, according to the authors.

Product realization, according to Valdea [18], refers to day-to-day productive company actions. These activities, in particular, require people's full participation in order to identify and communicate with extension beneficiaries' requirements. Furthermore, ISO 9001 process-based management encourages employee participation and responsibility definition. People must also openly discuss concerns and challenges linked to ISO 9000 adoption in addition to this criterion (ISO, 2008). They must, for example, evaluate the management review committee's recommendations. This is due to the fact that the administration's role is to assess the QMS's performance and provide recommendations for improvement [1].

The relevance of data analysis in decision-making is highlighted in the quality management principles on which ISO 9001 is based [8]. This could be linked to the ISO 9001 measurement, analysis, and improvement standards. For example, the institution must devise a strategy for collecting and monitoring data and information on customer satisfaction. Internal audit findings should be communicated to the audited area so that management can resolve any non-conformities discovered. After gathering and reviewing the information, it appears that the decision to take remedial action is required. The audit results must also be communicated in a transparent manner [8].

The internal audit's goal is to guarantee that the ISO 9001 requirements are being followed. It's also to determine whether the QMS is relevant to the organization's overall goals [11]. He also urges the internal auditor to maintain a professional demeanor and gain a thorough understanding of the company's operations and culture. As a result, the organization should appreciate their development recommendations.

Meanwhile, in order to get ISO 9001 certification, a certification audit must be done by a third-party assessor or accreditation agency [9]. Its purpose is to see if the defined systems comply with ISO 9001 requirements and if they've been implemented correctly. As a result, external auditors' recommendations to address large or minor non-compliance should be taken seriously [10].

Corrective action is the most important improvement agenda in ISO 9001. The organization must design a procedure for eliminating nonconformity reasons and preventing recurrence [12]. In this regard, [10] argues that while dealing with 'non-compliance' issues, the organization should avoid blaming. Indeed, he is a strong proponent of promoting a positive culture at all levels. [19] found that ISO 9001 certified hospitals adopted the notion of openness and consistently promotes a "no-blame" culture, decreasing the possibility of spreading a negative and hesitant response to auditing and fostering process ownership, based on an Oman case study.

To keep the ISO 9001 certification, it must be demonstrated to the certifying body that the QMS is working continuously and incorporating appropriate enhancements. To put it another way, keeping everything in order, maintaining comprehensive records, tracking changes, and managing the internal audit program necessitates ongoing effort. To keep the certificate current, a surveillance audit must be performed on a regular basis, usually once a year. The primary difference between an initial and a surveillance audit is that significant noncompliance should be re-audited in a shorter time frame (six weeks), whereas an initial audit allows for thirteen weeks of corrective action [10].

Teamwork, top management commitment, cooperation, competency, training, responsibility, accountability, good housekeeping, leadership, people involvement, communication, coordination, continuous improvement, listening to the customer, open discussion, and effective decision making are the elements of a university culture that are required in ISO 9001 maintenance.

Understanding the organization's context is the first step in establishing and maintaining a Quality Management System [8]. It requires a defined vision, goal, and fundamental values for the organization that has implemented QMS. Furthermore, the QMS mandates that the university have a quality policy. To establish their application to the operation, all of these must be examined. Furthermore, the University shall determine the requirements and expectations of interested parties in accordance with Clause 4.

This includes determining the needs and expectations of relevant oversight agencies, such as the Commission on Higher Education, the Civil Service Commission, the Department of Budget and Management, the Commission on Audit, and other government line agencies, in the case of the SUC's extension services.

These authorities routinely provide memos and recommendations on how to undertake extension services in various SUCs across the country, according to key informants from UNIVERSITY 1 and UNIVERSITY 2.

The SUCs, on the other hand, must determine the needs and expectations of extension partners and beneficiaries. The community, NGO, LGU, cooperatives, and other private industry partners are among them. SUCs normally evaluate these needs and expectations through needs assessment as part of planning for extension programs and projects, based on the data acquired. Beneficiaries and partners' requirements and expectations, like those of oversight authorities, must be updated on a regular basis to ensure that they remain relevant.

Leadership and strong governance are the most critical aspects of QMS sustainability. This includes not only members of the administrative council, but also the Quality Management Representative and ISO Core Team members. Leadership commitment is one of the major aspects of leadership that the ISO 9001:2015 depicts. All actions of the Plan, Do, Check, and Act stages of the QMS sustainability are shared by these organizations.

Nonconformance to the stated standards may emerge from monitoring and evaluation [8]. UNIVERSITY 1 and UNIVERSITY 2 experienced certain nonconformances during the external audits, according to the interview. Those nonconformances, on the other hand, had been satisfied and complied with. As a result, the standard will necessitate corrective action. Clause 10 (Improvement of the international standard) addresses this. The process owner or the responsible office must conduct a Root Cause Analysis before taking corrective action.

The institution is also engaged on the number of participants that is involved in extension programs found in figure II. There had been two detected independent variables which are the age and the gender of the faculty, however the percentage of dedication in implementing the extension projects rely on the application of the projects.

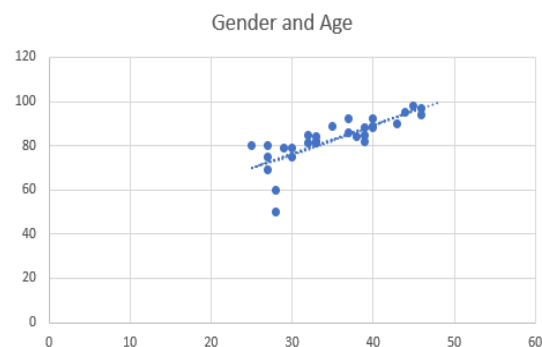


Figure II. The trendline of Age and Gender involvement in Extension Projects

Based from the results, the parameters are significant to predict whether the faculty will be engaged in extension projects and the probability of involvement.

TABLE VII.
RESULTS OF MULTIPLE LINEAR REGRESSION

	Coefficients	Standard Error
Intercept	41.70661831	7.17572156
Gender	-3.512876372	2.369743668
Age	1.328335321	0.19210724

Given this parameter, the linear regression equation resulted to:

$$Y = 41.71 - 3.51x_1 + 1.33x_2$$

CONCLUSION AND RECOMMENDATION

The study reveals the pros and cons of implementing the ISO 9001:2015 to University 1 and University 2, especially in the delivery of their extension services, which will enhance their impact on their clientele. The administrative council showed commitment to the implementation by creating a task force, capacitating the faculty and staff, and allocating enough resources for the implementation.

Preparation for implementation is a tedious process, but sustainability is more challenging. The support in terms of resources is also important for the implementation to satisfy not only the external clientele but also the internal (extension service providers). UNIVERSITY 1 may consider providing additional incentives for faculty members engaged in extension services. This is to encourage them to do more in the field and improve the quality of their services. Adequate monitoring and evaluation of the implementation are also necessary to ensure that the QMS is implemented according to the established systems and procedures.

Since the ISO 9001 quality management system (management commitment, internal communication, physical workplace environment, and capacity enhancement) has been found to improve employee performance, this study recommends that it be adopted as a quality management model in all core processes of State Universities and Colleges.

The study also suggests that SUCs be educated on the impact of quality management techniques on organizational performance in order to increase management commitment to the practice and, as a result, improve organizational performance.

Furthermore, all administrators (executive committee, administrative council, and QMS coordinators) should strengthen internal communication among all employees in their day-to-day activities to boost the organization's productivity levels, according to this study.

Furthermore, because the physical workplace environment has an impact on employee performance, this study suggests that management should guarantee that office working environments are favorable to motivating employees to work and increasing productivity. Finally, the study suggests that programs for employee capacity building and other relevant training be established and taken into account, as on-the-job training plays a larger impact in enhancing staff productivity.

The findings and analyses have raised several new questions that will need to be addressed in future research.

Financial performance, corporate reputation, cost minimization, and customer happiness can all be utilized as independent variables to measure the benefits of ISO 9001 quality management systems.

Also, instead of using the main data in this study, another research methodology, such as secondary data, could be used to examine the influence of a quality management system. Finally, based on the empirical findings of this study, it can be concluded that more related research is needed; the study can be conducted by using different case studies, such as other national government agencies, telecommunication companies, banking industries, and publicly traded companies, to see if the same results can be obtain

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