

The improving of Internal Auditing Quality Performance by the Use of Six Sigma Methodology Standards: An Applied Study Conducted at the General Company for Ports of Iraq

By

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Abstract

Under such strict challenges which the activities of economic units have witnessed in addition to the development of financial fraud and falsification manners, serious responsibilities have been imposed on internal auditing including the maintenance of validity and fairness of the outcomes of such activities for the concerned parties swiftly and qualitatively subject to applied standards. This track requires the upgrading of such business to cope up with such development. Six Sigma methodology is deemed as one of the most important approaches used in the attainment of quality and performance control. Therefore, researchers have taken care of such subject which aims to identify the extent to which the compliance with Six Sigma standards would affect the control and quality of internal auditing performance. To maintain such objective, the analytical descriptive methodology was then applied in the General Company for Ports of Iraq where 41 questionnaire forms were distributed to collect the related information. The most important results which have been concluded out of such information are: There is a correlation relationship between the compliance with Six Sigma Standards and the control of internal auditing performance quality via the coefficient correlation which ranged to (0.353). In the light of such results, the researcher proposed the most important recommendations including the company high management's serious trend to adopt the application of SS methodology to control performance quality especially in the field of internal auditing and the support of work environment using the quality concepts applied in the unit.

Keywords: Internal auditing Quality, Six Sigma, Six Sigma Standards.

Introduction

Challenges facing internal auditing business have led to the development of approaches and techniques used by such business to develop its own performance in such a way that it sets up the goals of economic units. Hence, exceptional attention has been paid to Six Sigma methodology due to the quality of performance it brings out which may reach to 99,99966% . Such methodology starts with the identification of the problem. Then, it contributes to measure and analyze its causes and finally it reaches to the Improvement Stage through finding out solutions to such problem and then applying control on the executed performance and accordingly it provides services and products free of defects.

Methodology of Research

The problem of this research can be observed by replaying to the below question: To what extent would the compliance with Six Sigma methodology control the quality of internal auditing performance of the research sample? Due to the significant importance which internal auditing entertains through major activities, duties and responsibilities along with the vast development of the goals of units, internal auditing performance should be developed in such a way that it meets the goals of economic units. Therefore, the compliance with the standards of Six Sigma methodology is deemed as one of the means used to maintain quality on one hand and control and develop internal auditing performance as required on the other. Moreover, the application of such methodology constitutes an exceptional importance on the part of companies. This research aims to identify the relation which occurs between the compliance with Six Sigma Standards and the quality of internal auditing performance of the research sample.

Literature Review

Many studies deal with this methodology and its impact on auditing quality. A study prepared by (Mustapha, Muda, Hasan, 2017) entitled (An Empirical Analysis of the Role of Internal Auditing in Lean Six Sigma). This study concluded that internal auditors shall acquire best and wider understanding of operations through the use of LSS methodologies and this allows for them propose proper recommendations used to improve operations.

(AL Harbi, AL Sadiri: 2018) 's study entitled (The Application of Sigma methodology Standards to Improve the Quality of Internal Auditing of Commercial Banks in KSA). The said study confirms that: the Internal Auditing Managements of Saudi Commercial Banks are ready to apply the standards of SS methodology. This issue is confirmed through the occurrence of a positive influence resulted out of the application of the said methodology to improve the quality of internal auditing. A study conducted in Philippines by (Alejandrino, et al, 2020) entitled (Audit Pattern Optimization in Service Industry using Six Sigma Methodology). The study concluded that Six Sigma methodology succeeded in maximizing the competency of the internal auditing team and minimizing the project performance term " time schedule " from 26,9 to 23,8 days.

This study is distinguished by the measurement of the influence resulted from the compliance with SS Standards on the quality of internal auditing performance of productive governmental units as well as the measurement of auditing quality from the prospective of the three operations (inputs, operations and outputs).

Six Sigma Methodology

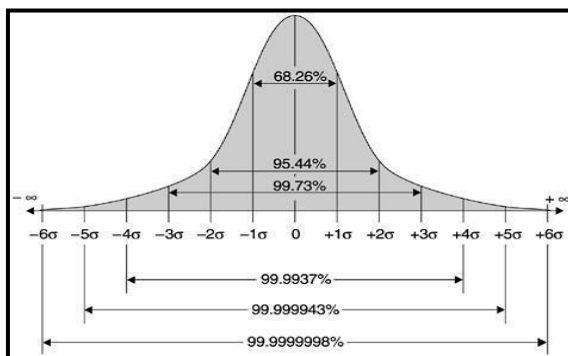
SS methodology is deemed as a work strategy seeking to identify the causes of errors, defects or defaults made during commercial processes and overcome such errors, defects or defaults through the focus on outputs with material importance for clients (Laureani& (Antony, 2019: 2). Sigma is the eightieth letter of Greek Alphabet. (σ) is the simple of such letter. Statisticians used such letter to refer to the standard deviation which indicates the occurrence of dispersion or disproportionateness in a certain process as to the targeted goals (AL Harbi, AL Sidiri, 2018, 399). Therefore, getting far away or dispersing from the relative mean

indicates the maximization of error quantity and this indicates the maximization of defect of the product or the minimization of quality upon the provision of the service. Therefore, SS is deemed as one of the important methodologies used in minimizing error volume to the greatest extent possible, that is, minimizing defects and errors percentage to the least possible quantity (AL Nahdir, 2017, 25).

Table. No. (1) shows the levels of SS , and Fig. No. 1 shows the degrees of SS.

Table No. (1): SS levels Fig. No. (1)

Sigma Level	Defects per Million	Yield
6	3.4	99.99966%
5	230	99.977%
4	6,210	99.38%
3	66,800	93.32%
2	308,000	69.15%
1	690,000	30.85%



(Patel and Chudgar, 2020:1205) (Quatait,2018:4)

Therefore, SS is defined as a systematic and methodological manner used to improve the strategic process and develop of a new product/ service using statistical techniques to overcome defects. (Dominic, 2021:1085). International Council for SS defines SS as a methodology used to improve the process and a statistical concept seeks to identify the deviation rooted in any process (16.. Council for Six Sigma, 2018:11).

CSFs – Six Sigma

Support Management Commitment

High Management is the first defense line which defends SS if there is any resistance occurs against change and persuades all employees and parties to maintain the Organization 's goals (AL Nahdir, 2017: 70). High management should qualify the team to be capable of taking procedures through the provision of a clear-cut direction, practical scope, definition, revisions and setting up clear limits for work (Rumane, 2018:90).

Learning and understanding of SS tools

In order to apply SS successfully, this issue requires deep knowledge of SS tools and techniques and practical understanding of conclusive and descriptive statistics and persuasion (Alzabari et al., 2019). Organization Personnel should be trained continuously and sufficiently to exercise work procedures with a high level of quality (Mustafa & Jamaludin, 2017: 4).

Practical learning should be merged with classical training and direct application and such merger shall make many opportunities available to apply the new knowledge.

Continuous Improvement

It is culture which seeks to get rid of defects within all Organization systems . It implies the work of all personnel together to undertake improvements with no need to make any huge capital investments (Talab et al., 2017). Maintaining a high level of quality requires to meet

and pass over clients' anticipations.

Communication and Teamwork

The application of SS within the Organization requires an evident communication (Sreedharan,2019: 11). The project shall be performed successfully through active communication (Singh et al,2019:687) . Communication shall be undertaken vertically and horizontally. Proper flow of information within the Organization has a vital importance as a means used to maintain or improve communication. It is important to plan to hold regular meetings to provide training and feedback as well as allow for the team members to share their experience to make sure that all such members are aware of SS 's main concepts (Garcia – AL caraz, et, 2017:4).

Cultural Change

if SS is applied successfully, material changes should then be introduced into the Organization 's culture as well as its personnel's mentality that such personnel shall be motivated towards the application of SS through many incentives which encourage them to accept such initiative and participate to adopt thereof after it is being developed (AL Baghdadi,2018:147).

Six Sigma Methodology Samples and Steps

Six Sigma methodology includes two basic samples used more frequently than others . DMAIC (Control, Improve, Analysis, Measure and Define) is the first sample or methodology. It is used in projects and processes in progress to improve the process.

AND (DMADV) methodology which includes (verify, Design, Analyze, Measure and Define). It is used in the design and development of new products and services (Ajeel,2021:37).

DMAIC Methodology: It is composed of five stages:

Define

The Definition stage is concerned with the identification of the problem, project requirements and success objectives (Council for six Sigma, 2018:124).

Measure

During such stage, the current process shall be understood and established. Information shall be collected and then measured through statistical methods (Zhong, 2017: 32).

Analyze

The basic and specified goal of this process is to find out the main cause of defects and the wastage of current information (kumar et,2020:4).

Improve

Solutions shall be formulated to remedy the rooted causes already identified during the analysis stage. Then, such solutions shall be assessed against the anticipated risks and improvement assessment after a pilot test (Alejandrino, et, 2020:1344).

Control

The control stage plays a vital role in the sustainability of process improvement.

Performance control usually allows to assess the progress which has been already obtained by virtue of the executed improvements (before against after) (Arcidiacono & Pieroni, 2018,147).

Internal Auditing

The subject of internal auditing has occupied a wide space of economic activities due to The change in the nature and volume of transactions processed by economic units Developments made in the field of drafting of laws and their associated standards and regulations especially after the emergence of financial falsifications in the major companies and the financial crashes followed such falsifications. Therefore, we shall deal with internal auditing as per the below citation: -

International Federation of Accountants (IFAC) defines internal auditing in Standard No. 610 Item No. A/14 as " a job practiced in an organization undertaking the activities of confirmation and such job includes consultancies designed to assess and improve the effectiveness of governance, risk management and internal auditing within the Organization (IFAC, 2015: 25). IIA defines internal auditing as: an independent advisory business and subjective confirmation designed to add a value and improve the Organization's processes and it helps the organization to achieve its objectives through the introduction of a systematic and disciplined methodology to assess and improve the effectiveness of the processes of risk management, control and governance (IPPF-Standard,2017:9; Al-Taie et al., 2017). Through the modern definition of internal auditing proposed by IIA, it can observed that the business of internal auditing is characterized by four features: -

Independency:

Independency means to get free from the conditions threatening the capability of internal auditing business or the Executive Audit Chief (CAF) to manage internal auditing responsibilities through an impartial manner. Independency allows for internal auditors to make the fair and impartial judgments necessary to the behavior of correlations correctly (INTOSIA,9140,2016: 4).

Subjectivity:

Subjectivity is defined by IIA as a mental impartial attitude allows for internal auditors to exercise their correlations through a manner which makes them to believe honestly in the production of their work and the quality of their work is not subject to risk in one way or another. Subjectivity requires internal auditors not to let their judgment to be subject to the control of other people.

Confirmative Action

Confirmation services are defined as those independent professional services used to improve the quality or environment of information for decision makers to depend on or they are a correlation aims to obtain sufficient and proper evidences used to express a conclusion engaged to upraise the trust level to targeted users (AL Tantawi et al, 2021:10). Confirmation services include a subjective assessment for evidences conducted by internal auditor so as to introduce suggestions and conclusions related to the unit, work, job, process, system or other subjects. (IPPF-Standards, 2017: 2).

Advisory Business

Advisory services are provided based on the recommendations which contribute to add value and improve the effectiveness of governance, risk management and control (AL Wardat,

2017: 29; Talab et al., 2017). An internal auditor provides advisory services to the high management and Board of Directors and such advisory services shall be limited to nonexecutive aspects only and it is not permitted to provide advisory services for executive work aspects in implementation of independency principle.

Quality of Internal Auditing Performance

Quality of auditing is the capability of auditor to find out the possible errors and provide recommendations for improvement which can contribute to maintain auditing quality if internal auditors perform their duties and responsibilities actively through the full auditing process. Internal auditors should comply with auditing standards in terms of mission planning, collecting of auditing evidences and expression of opinion. (Alzabari et al., 2019; Arum & Wahyudi, 2021:9). Quality of auditing is defined by the international Criterion No. 220 as " is represented by the policies and procedures applied in the auditing company to verify that the performed auditing activities would be made in compliance with the applied auditing standards." (IAASB, 2015:74).

Auditing quality is maintained when the work team is adopting proper values, ethics and behaviors, entertains sufficient skills, knowledge and experience, allocates enough time to perform the auditing business, applies procedures related to quality control, complies with applied laws, systems and standards, submit useful reports in timely manner and interacts properly with concerned parties (IAASB,2015:44).

To maintain quality control, it is important to qualify the three processes (inputs, processes – output) as follows (Thijeel et al., 2018):

Quality of Auditing Process Inputs

To maintain high quality out of auditing inputs, the following issues should be taken in consideration: -

Planning Process Quality: The planning of auditing process includes setting up a general strategy, identification of goals, scope of auditing and the authority to whom the results of auditing process shall be submitted to (Rafa'ah et al, 2017:85).

The second issue is to receive the high management's support: Internal auditors have close and firm relation with managements of Organizations during exercising their daily business. They need to proper support from their management to be more active and to help them to implement auditing goals (FISSEHA, 2021:22).

And then, the nomination of high quality auditing work team: which shall have the knowledge, skills and other competencies required to manage their responsibilities. The more the internal auditor is experienced, the more quality control is upraised (Arum & Wahyudi, 2012: 10).

In this context, it is important to resolve that Auditing Charter must be qualified:

The objective of the business of the internal auditing management as well as the power and responsibility of such management should be officially identified within the charter of the internal auditing management in such a way that it complies with the

definition of internal auditing and the rules and ethics of such business as well as occupational International standards of internal auditing practice (IPPF – Standard, 2017:21). Also, the internal auditing manual should be characterized by being of quality: Such auditing manual is designed so as to be used as the basic referential source of auditing process conducted by management auditors, assist new auditors in their occupational development, provide auditors with instructions which help them to apply the techniques of auditing (General Audit Manual,4) and also adherence to ethical values and impartiality: while auditors practice their business, they should (use occupational competency with care and accuracy, occupational suspicion and occupational judgment in full occupational process (Arum & Wahyudi,2021:10).

Quality Auditing Process

Auditing process is composed of the following issues:

Information collection, inspection and assessment:

Field work includes a process of executing the auditing program and such program shall include all exerted endeavors to gather or collect, analysis, assortment, assessment, explanation and documentation of information so as to an opinion can be expressed and recommendations of improvement can be submitted (Nzechukwu,2017: 166).

Obtaining proper and sufficient evidences: Auditor should have the knowledge and skill to obtain proper and sufficient evidences assigned to each auditing so as to meet the industry standards to obtain one or more kinds of the following evidences: 1- physical inspection, 2- Confirmation, 3- Inspection, 4 - Analytical procedures, 5- Client inquiries, 6 - Account recovery, 7- Performance recovery , 8- Note ... Etc. (Arens et al, 2018: 179-185).

Preparation of working papers: Records maintained by the auditor showing the applied auditing procedures, collected information, reasonable conclusions drawn up in the auditing correlation.

Apparently, working papers of auditing contain the second level of auditing evidences or such evidences acquired by the auditor himself or herself. Internal auditors are required to maintain such working papers which contain all information related to the performed work and support the auditor's report which has been recently developed. (Nzechukwu,2017:184).

Also, (the assessment of the quality of supervisory requirements, governance processes and risks, the use of auditing programs and internal auditing quality control) shall be carried out at this stage.

Quality of Outputs (reports)

To avoid errors by auditors, reports should be accurate, subjective, clear brief, objective and comprehensive and prepared in a timely manner (Al-Taie et al., 2017) . Therefore, and in order to maintain the quality of reports, it is remarkably necessary to comply with international standard upon the reparation of reports: companies showing a higher level of compliance with such standards as to their internal auditing do entertain a better quality of reports. We can say that the magnification of perceptions of the compliance with internal auditing occupational standards paid by internal auditors shall improve the quality of auditing. (Baklouti & Krichene, 2020 -7), and also internal auditors shall abide themselves by quality improvement standards: CAE shall develop a program to make sure and improve quality and maintain such program to cover all aspects of internal auditing business (IPPF- Standards, 2017: 8). Such program shall

also include the assessment of the efficiency of Internal auditing business and identification of improvement aspects occurring therein (AL Rimhi, 2017: 99).

Recommendations of improvement of governance and risk management shall be submitted: part of the important outputs provided by the internal auditor are such recommendations some of which are those related to governance and risk management that the internal auditor submits important proposals to his or her high management related to the support of the governance process to attain the Organization's goals (IPPF-Standard, 2017:12).

Feedback

Upon the performance of follow up, CAE shall develop and maintain a program to observe response for the management including the supervision of the execution of the recommendations after the assessment of Internal Quality Control for. Internal auditing shall implement the procedures by auditors to obtain information from the persons in charge of executing recommendations of auditing and also observe the execution of the recommendations submitted by internal auditors (Datsenko, 2021:25).

The Results

There is a statistical relation between the compliance with the Six Sigma Standards (Management's commitment and support, learning and understanding of Six Sigma tools, sustainable improvement, communication and teamwork, cultural change) and the quality of internal auditing performance.

General Company for Ports of Iraq was incorporated in 1919. It is a state company and one of Ministry of Transportation and Communications's Affiliates. It is composed of: AL Ma'qal Port, Om Qasr Northern and Southern Port, Khor AL Zubair Port, Abo Flos Port and AL Faw Grand Port (presently, under construction). The company aims to manage and arrange its ports and harbors by setting forth rules and taking such decisions required to operate and develop them subject to the rules of Act of Ports No. (21) of 1995 and Ship Registration Act No. (19) of 1942 . Company 's nominal capital is (603,000,000) IQD six hundred three million IQD, reserves are equal to (451,861,430,520) IQD, Retained earnings of 2018 were amounting to (39,720,389,245) IQD, total distributable profit of 2018 was(124,727,841,545) IQD. Personnel number is 9006 employees.

41 questionnaires were distributed within the Departments of the General Company for Ports of Iraq shown in the below table: -

Table No. (2): Number of questionnaires distributed within the company

No. Department / Division	No. of the Recovered true questionnaires	No. of Department / division personnel (research sample)	Research – included personnel percentage to the total number
1 Internal Auditing and Supervision Department	21	79	27%
2 Financial Affairs Department	13	131	9%
3 Quality Division	8	11	73%
Total	41	221	19%

The table is prepared by the researchers

The analysis of the personnel – included 's qualifications as shown by table No. (3)

Table No. (3): Analysis of the qualifications of research sample

Variable	description	Freque ncy	Percent age	Variable	Descripti on	F r	%	
Job title	Director	15	36.6%	Years of experience	Less than5	5	12 %	
	Director Assistant	10	24%		5-10 years	7	17 %	
	Accountant / senior auditor	7	17%		11-15 years	6	15 %	
	Accountant / s auditor	3	7%		16-20 years	11	27 %	
	Accountant / auditor	4	10%		21 years and more	12	29 %	
	Assistant Others	2	5%					
	Specializa tion	AccountancyAu diting	24		58.5%	Age	30 years and less	5
				31-40 years	12		29 %	
Financial and Banking		5	12%	41-50 years	20		49 %	
Management		4	10%	More than 50	4		10 %	
Economics others		3	7%					
5		12%						
Academic qualificati on	Master	2	5%	No. of training courses in auditing/accou nting and quality	non	4	10 %	
	Legal	1	2%		From 1-4	22	54 %	
	Accountancy							
	Bachelor diploma	36	88%		More than 5	15	36 %	
	2	5%						

After revising table No. (3), we can observe that 60% of the research sample are holding the title of Director or Director Assistant and this indicates the sample has a significant effect with regard to the occupational work concerning the provision of the sufficient support for other personnel serving in the same Department and the experience and effect they have to adopt auditing standards. In terms of specialty, Accountancy and Auditing represents 59% of the sample. In terms of experience, the majority of such sample are holding Master and Bachelor Degrees. Master degree represents 5% while Bachelor degree represents 87%. Now, it can be concluded that the members of such sample are holding scientific qualifications and they have proper understanding and sufficient information to reply the questionnaire items accurately and subjectively.

The analysis of the questionnaire items

The questionnaire was prepared to include two topics. The first topic deals with the extent to which the SS Standards are complied with. The second topic deals with the extent to

which SS standards are reflected on the quality of internal auditing performance as shown in the Tables No. (4) and (5) below:

Table No. (4): Questionnaire questions related to the extent of SS standards compliance

No.	Description	Mean	S.D	Relative importance
First standard: High Management 's commitment and support				
1	Units goals and ends shall be developed through the actual identification of goals and they shall be measurable	3.97	0.651	83%
2	Management shall help establish an environment encouraging creativity, innovation, continuous improvement.	3.95	0.805	61%
3	Management shall provide financial and physical capabilities required to apply and use the quality program for internal auditing units.	3.76	0.888	62%
4	Management shall support the quality of auditing, follow up its performance and make use of the acquired results and recommendations.	4.00	0.721	83%
	Degree of Standard	3.92	0.51	73%
Second standard: Learning and understanding of Six Sigma Tools				
5	The unit follows a clear mechanism to designate the individuals with experience and competency and attract the attention of consultants specialized in quality field.	3.88	0.78	73.2%
6	The unit shall provide advanced training courses to train its personnel especially in the field of internal auditing and Auditing quality programs.	3.68	0.82	61.0%
7	Modern techniques, quality tools and applied de facto training to develop the personnel's performance.	3.4	0.76	61.0%
8	Management shall observe the extent of the development of the personnel 's performance and seek to provide financial and moral incentive where such performance development does depend on the success and application of quality programs.	3.73	0.71	63.4%
	Degree of Standard	3.67	0.49	64%
Third standard: continuous improvement				
9	High Management shall jointly take part with the Internal Auditing Management to conduct the periodical comprehensive and continuous revision of internal auditing plans to make sure of their compliance and make the required revisions thereto.	4.02	0.69	78.0%
10	Unit management shall act to maintain the continuous development for the quality of auditing in order to find out and discover deviations and minimize their occurrences.	4.05	0.74	80.5%
11	Unit management shall be encouraged to use modern techniques to make continuous improvements which helps internal auditing to perform its activities accurately, actively and in timely manner.	3.90	0.80	68.3%
12	Management shall seek to find out the proposals and recommendations suggested by internal auditing and act to develop and apply thereof.	3.85	0.76	68.3%
	Degree of Standard	3.96	0.51	74%
Fourth Standard: communication and teamwork				
13	All Departments are to take part in setting forth and execution of the unit's strategic plans	3.85	0.76	68.3%
14	Management has the obvious mechanism and vision to make the proper communicate between department and units the engagement of the personnel based on their own experience and information transmission.	3.71	0.78	61.0%
15	The unit shall seek to develop communication means in such a way that it contributes to provoke the information to flow into the unit in a timely manner and proper form.	3.85	0.73	70.7%
16	Plans shall be transferred to all the units levels through a clear, understood and creative manner .	3.80	0.75	65.9%
	Degree of Standard Degree:	3.80	0.53	66%
fifth Standard cultural change				
17	Management shall use technical factors to introduce material changes into the work environment	3.1	0.84	45.9%
18	The unit shall invite all personnel (within the leading levels) to set forth and execute the strategy to be some sort of an incentive help to accept the results.	3.61	0.70	58.5%
19	The personnel shall accept any initiative to make changes in the work environment and contribute to work development	3.85	0.85	65.9%
20	Management encourages to adopt values and	3.76	0.62	65.9%
	Standard degree:	3.58	0.45	60%

After the revision of table No. (4), a compliance with the first standard (that is, High management 's support and commitment) does occur that the mean was recorded to be equal to (3.96), materiality level was (73%). The second standard (learning and understanding of SS tools), the mean was recorded to be equal to (3.67) and materiality level was (64%), i.e, there is an agreement adopted by the research sample to apply this standard by internal auditing. The third standard 's means was recorded to be equal to (3.96), i.e, there is a significant percentage of agreement adopted by the research sample to abide by the

requirement of (continuous improvement) with a materiality level of (74%). The fourth standard 's mean was recorded to be equal to (3.8), agreement level was (66%), i.e agreement level was equal to (66%), i.e, the (communication and teamwork) standard has been applied. The fifth standard 's mean was recorded to be equal to (5,58) and materiality was (60%), i.e, this standard is applied. The mean of compliance with all Six Sigma standards was recorded to be equal to (3.82) and the standard deviation of replies was (0.36), i.e, SS standards are applied by the company and there was no deviation was noticed in the replies of the research sample members. The above standards are listed below respectively based on their level of application attained by each standard: -

- Continuous Improvement Standard – highest level of application .
- High Management Support Standard.
- Learning Standard.
- Teamwork and Communication Standard
- Cultural Change Standard.

Table No. (5): *the extent of the reflection of SS Standards on the quality of internal auditing performance.*

no	Description	Mean	Standard deviation	Materiality
First – quality of auditing inputs				
21	High Management support provided in the field of quality programs and making available the capabilities required to effect occupational quality shall lead to maintain the quality of internal auditing performance.	4.17	0.667	90.2%
22	That auditors comply with behavioral and ethical principles while performing their auditing processes (demonstrating professional competency and diligence, adopting the professional skepticism , subjectivity and impartiality), this shall contribute to the quality of internal auditing.	4.41	0.591	95%
23	There should be sufficient number of auditors with competence, skills, experiences and certificates of financial and supervisory sciences to carry out their responsibilities in such a way that it leads to qualify the processes they perform.	4.02	0.935	73%
24	Auditors' compliance and capability to maintain their own dependency shall contribute to the subjectivity of the introduced opinion and their judgments shall be neutral and impartial.	4.24	0.699	85%
25	There should be a comprehensive internal auditing program characterized by governance and identifies precisely the procedures of auditing , missions and responsibilities in such a way that it ensures the execution of performance with high quality.	4.05	0.973	73%
	Total degree	4.18	0.433	83%
Second - Quality of processes				
26	The engagement of workers in internal auditing through joint committees taking part in the decision – making process within the company.	4.10	0.66	88%
27	Internal auditing 's provided constructive and preventive missions and services do contribute to add a value for the unit, support the position of internal auditing and maintain performance quality.	3.85	0.98	78%
28	The internal auditing business helps to assess the systems of internal supervision through the assessment of their effectiveness, competence and continuous improvement thereof .	4.12	0.84	75%
29	There is cooperation and interaction between internal auditing system and other parties participated in the auditing process especially external auditing in such a way that it contributes to upgrade the performance quality .	4.05	0.77	82%
30	That internal auditing complies with auditing standards, other relevant laws and regulations and quality control procedures shall be reflected on the quality of work performance.	4.24	0.69	85%
	Total degree	4.07	0.49	82%
Third – Quality of Outputs				
31	Internal auditing prepares accurate, subjective, clear and brief periodical reports in a timely manner in such a way that it complies with international standards which are reflected in the quality of internal auditing.	4.24	0.734	82%
32	There are many communications and contacts are effected with supervisory and financial organizational authorities in such a way that it ensures the confirmation on the supervisory aspects tackled by internal auditing to report all illegal acts in a timely manner and specific aspects in the process of reporting process.	4.02	0.790	79%
33	Internal auditing provides the proper recommendations which help to improve the company performance besides its own performance and development.	4.10	0.735	82%
34	A firm system of follow up characterized by being qualified should be available in such a way that it ensure the execution of all noticed remarks. such issue shall lead to the improvement and discipline of the performance quality.	4.02	0.689	81%
35	Quality control programs help to improve the procedures and effectiveness of the used means and minimize the errors and deviations which may made in the performance.	3.95	0.973	80%
	Total degree:	4.07	0.433	81%

After the revision of the above table and as far as the compliance with SS standards is concerned, such compliance shall be reflected on the internal auditing performance quality. We observe that (quality of auditing inputs) 's Mean was recorded to be equal to (4.18) with a high level of compliance amounting to (83%), i.e, internal auditing teams apply and comply with such inputs. (Quality of Processes)'s Mean was recorded to be equal to (4.07) with a level of compliance amounting to (82%), i.e, the research sample is in favor of the compliance with the quality of processes . Finally, (Quality of outputs)'s mean was recorded to be equal to (4.07) which indicates a level of compliance equal to (81%).

Testing of correlation relations existed between each of SS standards and internal auditing quality

Table No. (6): Correlation Matrix Between SS Standards and Internal Auditing Quality

SS standards	Interior Auditing Quality		Significance
	Pearson Correlation	Sig	
High Management support and commitment	0.214**	0.018	Statistical significance
Learning and understanding SS tools	0.367**	0.009	Statistical significance
Continuous improvement	0.383**	0.007	Statistical significance
Communication and teamwork	0.294**	0.012	Statistical significance
Cultural change	0.269**	0.014	Statistical significance
Application of SS standards	0.353**	0.003	Statistical significance

Based on the information contained in the above table No. (6), and through the correlation coefficient values between the compliance with SS standards and internal auditing performance quality, we can observe that there is a direct correlation relation, i.e, the more SS standards are looked after, the more the internal auditing performance quality gets upraised that correlation coefficient was recorded to be equal to (0.214) and this indicates the occurrence of a significant relation between management 's support and internal auditing performance quality in the research sample at the significance level of (sig. < 0.05).

As to learning and understanding of tools, the correlation coefficient was recorded to be equal to (0.009) and this indicates that the occurrence of a direct relation between learning and management quality and in the meantime confirms the role of learning and understanding of SS tools which results in the development and discipline of performance quality.

As to continuous improvement, the correlation coefficient was recorded to be equal to (0.383), i.e, there is a role for the continuous improvement in the discipline of internal auditing performance quality. The same is true of communication and teamwork that we can observe that the correlation coefficient was recorded to be equal to (0.294) with significance level of (0.012) which indicates the occurrence of a correlation between communication and teamwork on one hand and the development of internal auditing performance quality. Concerning cultural change, the correlation coefficient with internal auditing performance quality was record to be equal to (0.269) which indicates the occurrence of a correlation relation.

As to the correlation relation of compliance with all SS standards was recorded to be equal to (0.353) and hence such correlation agrees with the research hypothesis which stipulates that there is a statistical significance of the compliance with SS standards on internal auditing performance quality.

Conclusion

The Methodology is deemed as one of the advanced important methodologies which

attain a high level of quality which has met a considerable success and massive circulation because it focuses on clients' needs and seeks to provide services and products free from defects and errors because it has its own tools and techniques which act sustainably to improve services and eliminate defects which may reach to 3,400,000 defects per 1,000,000 opportunities.

The application of SS methodology requires an ad hoc specialized and trained team named (SIGMA Team) which is composed of (leader, champion, master black belt, black belt, green belt, yellow belt) leads the process as well as the availability of a group of cultural requirements in the unit called SS standards (High Management support, continuous improvement, Learning and understanding of SS tools, communication and teamwork, cultural change). The team shall work to widespread the culture of quality. The team shall also apply either DMAIC methodology to control the performance in progress or one of DFSS methodologies in case a new business is launched starting from the design.

The research sample shows a compliance to apply SS standards where the compliance level was equal to (68), Mean was (3.82). The standard of the continuous improvement scored the highest level of application (74%) while the least standard of compliance was (cultural change) with an application level of (60%). There is a relation occurs between the compliance positively with SS standards and the internal auditing performance quality through the correlation coefficient of (0.353) which indicates the occurrence of a relation between compliance and internal auditing performance quality within the research sample.

13-6. Therefore, the researchers recommend to adopt the application of SS standards and support the culture of quality within work as well as the standards of internal auditing quality.

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