

Proposed Implementation Plan for Development of Administrative Directorate of Youth and Sport in Sharkia Province Related to Requirements of Six Sigma Quality Standards Application

Ayman Ali Abd El-Hameed El-Shaer*

Abstract

This research aims to create a proposed implementation plan for development of administrative Directorate of Youth and Sport in Sharkia province related to requirements of Six Sigma quality standards application, Descriptive survey method was used as to suitability for the research procedures. The researcher selected (174) staff members, research community-style comprehensive inventory of Directorate of Youth and Sports in Sharkia and departments, twenty four (24) staff members have been excluded for the pilot study, the research sample became (150) staff members. Results: there are statistically significant of value of Ka2 of sample response to (1) senior management's contribution towards administrative development related to requirements of Six Sigma quality standards application. (2) Availability of training for administrative development related to requirements of Six Sigma quality standards application. (3) Suitability of information systems in administrative development related to requirements of Six Sigma quality standards application. (4) Presence extent of teams work for administrative development related to requirements of Six Sigma quality standards application. (5) Cooperation departments and divisions extent to develop administrative development related to requirements of Six Sigma quality standards application at $p < . (2, 0.05)$.

Keywords: implementation plan - Six Sigma strategy.

Introduction

Without a strategic quality plan, an enormous amount of time, money, and effort will be wasted by the organization dealing with faulty designs, manufacturing defects, field failures, and customer complaints. Quality planning involves identifying customers, both external and those that operate internal to the business, and identifying their needs (this is sometimes called listening to the voice of the customer). Then product or services that meet or exceed customer expectations must be developed. The Organizations must then determine how these products and services will be realized. Planning for quality improvement on a specific, systematic basis is also a vital part of this process. (Burr, I.W., 1996)

Six Sigma has gained an avid following among executives and managers for its ability to reduce cycle time, eliminate product defects, and dramatically increase customer involvement and satisfaction. But Six Sigma can't work without widespread employee involvement and commitment. (Peter Pande, Lawrence Holpp, 2002).

Six Sigma is not confined just to manufacturing industry, rather it is equally applicable to service industry. (Antony J, et. al., 2007).

Six Sigma consists of a set of statistical methods for systemically analyzing processes to reduce process variation, which are sometimes used to support and guide organizational continual improvement activities. Six Sigma's toolbox of statistical process control and analytical techniques are being used by some companies to assess process quality and waste areas to which other lean methods can be applied as solutions. Six Sigma is also being used to further drive

* Assistant Professor at Sports management and Leisure Department, Faculty of Physical Education-(male), Zagazig University, Egypt.

productivity and quality improvements in lean operations. (Hahn, G., 2001).

Much of the quality management research to date has found that quality management is a multidimensional construct which is composed of multiple quality practices. These quality practices have different functions and roles regarding continuous improvement. For example, a typical quality practice – workforce management – is to use the entire capacity of workers and to encourage employee commitment to organizational continuous improvement efforts. Workforce management emphasizes the organizational and people side of quality management and uses a variety of techniques to facilitate changes, such as employee participation in decisions, employee recognition, teamwork, and the use of effective communications to create an awareness of organizational goals. Another typical quality practice – process management – is concerned with using statistical and scientific techniques to reduce process variation, which represents the methodological and technical side of quality management (Robbins, Zu Fredendall, 2006).

The importance of this study because of its modernity in the Arab Management, Being a developing style seeks to raise the performance level and error handling in scientific ways which lead eventually to efficiency and quality of performance and rapid achievement.

This research aims to create a proposed implementation plan for development of administrative Directorate of Youth and Sport in Sharkia province related to requirements of Six Sigma quality standards application which are:

1. senior management's contribution towards administrative development

2. availability of training for administrative development
3. suitability of information systems in administrative development
4. cooperation departments and divisions extent to develop administrative development
5. presence extent of teams work for administrative development

Hypotheses

1. How senior management's contribution towards administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application?
2. What is availability of training for administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application?
3. What is the suitability of information systems in administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application?
4. What is the presence extent of teams work for administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application?
5. What are cooperation departments and divisions extent to develop administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application?
6. What is the content of the proposed operational plan for the development of administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application?

Methodology

Sample and Data Collection

Table (1)
Subject characteristics

Sample	Number of agencies	Number of employees	Exploratory sample	Basic sample
Cabinet of the Directorate	23	410	7	59
Sub departments	17	340	5	36
Urban youth centres	25	378	8	30
Sports clubs	44	245	4	25
		1373	24	150

Descriptive survey method was used as to suitability for the research procedures. Researcher chooses the research community by intentional way from Cabinet workers in the Directorate of Youth and Sports in Sharkia and departments subsidiary.

The researcher selected (174) staff members, research community-style comprehensive inventory of Directorate of Youth and Sports in Sharkia and departments, twenty four (24) staff members have been excluded for the pilot study, the research sample became (150) staff members (table 1).

Data Collection

Survey for questionnaire axes of the administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application were used to measure the reality of administrative development.

Researcher designed questionnaire of the administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application using reference survey for questionnaire axes as shown in table (2).

Table (2)
Reference survey for questionnaire axes of the administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application

	Author & Reference No.	Year	Senior management support	Training	Information Systems	Cooperation of administrations and departments	Presence of team works	Communications	HR	Focus on client	Organizational culture
1	Pande , P , Holpp , I (10)	2002	*	*	-	*	*	-	-	-	*
2	Wary, Bruce, Hogan, Bob (14)	2002	*	*	*	*	*	-	*	*	*
3	Antony , J and Bhaiji (1)	2003	*	*	*	*	*	*	-	*	-
4	Antony, J.I. (2)	2004	*	*	*	*	*	-	-	-	-
5	Rodeny – Stewart (13)	2006	*	*	*	*	*	-	-	-	*
6	Pie – Shih , H.S (11)	2006	*	*	*	-	*	*	-	*	*
7	Morgan , John (8)	2006	*	*	*	-	*	-	*	-	-
8	Antony, Jiju (3)	2007	*	*	-	*	-	-	-	-	-
Total			8	8	6	6	7	2	2	3	4
%			100%	100%	75%	75%	87.5%	25%	25%	37.5%	50%

Table (2) shows reference survey for questionnaire axes of the administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application, minimum

(70%) of frequency percentage were used to select questionnaire axes.

These axes were inside questionnaire, axes were evaluated by experts in sport management, minimum (80%-100%) of frequency percentage were used to select axes as shown in table (3).

Table (3)
Agreement of experts about questionnaire axes of the administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application N=10

serial	axes	Agreement of experts	Percentage
1	senior management's contribution towards administrative development related to requirements of Six Sigma quality standards application	10	100%
2	availability of training for administrative development related to requirements of Six Sigma quality standards application	10	100%
3	suitability of information systems in administrative development related to requirements of Six Sigma quality standards application	10	100%
4	cooperation departments and divisions extent to develop administrative development related to requirements of Six Sigma quality standards application	10	100%
5	presence extent of teams work for administrative development related to requirements of Six Sigma quality standards application	10	100%

Researcher designed questionnaire proposed management to delete, add or redesign phrases. phrases, phrases evaluated by experts in sport

Table (4)

Agreement of experts about phrases selection of questionnaire axes of the administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application N=10

serial	Percentage	serial	Percentage	serial	Percentage	serial	Percentage	serial	Percentage
1st axis: senior management's contribution towards administrative development related to requirements of Six Sigma quality standards application									
1	100%	2	90%	3	40%	4	100%	5	100%
6	90%	7	90%	8	100%	9	80%	10	90%
11	80%	12	80%						
2nd axis: availability of training for administrative development related to requirements of Six Sigma quality standards application									
13	90%	14	90%	15	80%	16	40%	17	80%
18	100%	19	80%	20	90%	21	90%	22	40%
3rd axis: suitability of information systems in administrative development related to requirements of Six Sigma quality standards application									
23	100%	24	90%	25	90%	26	90%	27	100%
28	100%	29	30%	30	100%	31	100%	32	80%
33	50%	34	100%						
4th axis: cooperation departments and divisions extent to develop administrative development related to requirements of Six Sigma quality standards application									
35	100%	36	90%	37	100%	38	100%	39	90%
40	100%	41	80%	42	100%	43	100%	44	100%
45	90%	46	100%	47	100%				
5th axis: presence extent of teams work for administrative development related to requirements of Six Sigma quality standards application									
48	80%	49	100%	50	80%	51	80%	52	100%
53	100%	54	80%	55	100%	56	100%	57	40%
58	100%								

Table (4) shows Agreement of experts about phrases selection of questionnaire axes of the administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application, minimum (70%) of frequency

percentage were used to select phrases. Numbers of final phrases were (52).

Table (5) shows numbers of questionnaire phrases in its principled form, Number of deletions and Figures of deletions according to expert opinions' percentage.

Table (5)

Number of questionnaire phrases in its principled form, Number of deletions and Figures of deletions according to expert opinions' percentage

serial	axes	Number of phrases	Number of deletions	Figures of deletions
1	senior management's contribution towards administrative development related to requirements of Six Sigma quality standards application	12	1	3
2	availability of training for administrative development related to requirements of Six Sigma quality standards application	10	2	16,22
3	suitability of information systems in administrative development related to requirements of Six Sigma quality standards application	12	2	29,33
4	cooperation departments and divisions extent to develop administrative development related to requirements of Six Sigma quality standards application	13	----	----
5	presence extent of teams work for administrative development related to requirements of Six Sigma quality standards application	11	1	57
Total		58	6	

Table (6)
Questionnaire axes of the administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application & phrases number which belong to

serial	axes	Total numbers of phrases
1	senior management's contribution towards administrative development related to requirements of Six Sigma quality standards application	11
2	availability of training for administrative development related to requirements of Six Sigma quality standards application	8
3	suitability of information systems in administrative development related to requirements of Six Sigma quality standards application	10
4	cooperation departments and divisions extent to develop administrative development related to requirements of Six Sigma quality standards application	13
5	presence extent of teams work for administrative development related to requirements of Six Sigma quality standards application	10
Total		52

Final questionnaire axes of the administrative development of Department of Youth and Sports in Sharkia related to requirements of Six Sigma quality standards application & phrases number which belong to (table 6).

This study used a discrete, three-point scale with end points of strongly disagree (= no) and strongly agree (= yes) to measure the constructs. The items to measure the quality practices associated with Six Sigma implementation were adapted from prior empirical research on evaluating quality practices.

Pilot Study

The researcher conducted the survey on a sample of (24) staff members from the same research community and outside the basic sample in the period from 22/04/2012 to 01/05/2012.

Scientific Processing of the Test **I. The Stability Coefficient**

The researcher applied the test method Spearman & Brown to calculate correlation of phrases, (Cronbach's alpha) to calculate stability of phrases, ranging from the correlation coefficient between (0.756, 0.885) which indicates the high stability of the variables under consideration. Correlation coefficient of every degree of axis and total degree of questionnaire ranging between (0.768, 0.899) which indicates the high stability of the variables under consideration.

II. The Factor of Honesty

Internal consistency and sincerity was used, it transpired that the internal consistency of significant Scientific processing of phrases, to learn which shows the sincerity of the phrases under discussion.

Basic Study

The researcher performed the survey on 07/05/2012 up to 21/05/2012, Started by applying questionnaire survey.

Results and Discussion

Table (7)

Frequency, percentage, value of Ka2 and phrases rank of sample response to 1st axis: senior management's contribution towards administrative development related to requirements of Six Sigma quality standards application N=150

S	Phrases	Yes		Rather		No		Relative weight	Relative Importance	Ka ²	Rank
		Freq.	*%	**Freq.	***%	**Freq.	***%				
1	There are seriously from senior management of the Directorate of disposing old ways and search for new sophisticated methods.	99	66%	27	18%	24	16%	375	83.33	72.12*	1 st
2	Modern technologies of senior management availability of the Directorate needed to raise performance level and business achievement.	21	14%	99	66%	30	20%	291	64.67	72.84*	5 th
3	Senior management encourages to get rid of unnecessary steps in the work.	30	20%	90	60%	30	20%	300	66.67	48.00*	4 th
4	Senior management gives the opportunity to participate in the efforts to improve performance.	51	34%	84	56%	15	10%	336	74.67	47.64*	3 rd
5	Senior management put precise criteria to measure performance level.	12	8%	96	64%	42	28%	270	60.00	72.48*	9 th
6	Dependent senior management financial allocations to improve the quality of performance.	15	10%	42	28%	93	62%	222	49.33	62.76*	10 th
7	Senior management development praising the achievements at work.	69	46%	54	36%	27	18%	342	76.00	18.12*	2 nd
8	Senior management reward outstanding in work.	24	16%	90	60%	36	24%	288	64.00	49.44*	7 th
9	Senior management benefit from developmental studies and visions for methods development of work on an ongoing basis.	18	12%	96	64%	36	24%	282	62.67	66.72*	8 th
10	Senior management allows dialogue in front of non-workers convinced modern methods of development and try to persuade them.	18	12%	21	14%	111	74%	207	46.00	111.72*	11 th
11	Senior management allows applications of modern and advanced administrative methods of the affiliated Directorate.	15	10%	111	74%	24	16%	291	64.67	112.44*	5 th Repeater

* *Significantly different at p < . (2, 0.05) = 5.99*

** *Frequency*

*** *Percentage*

Table (7) shows statistically significant of value of Ka2 of sample response to axis: senior management's contribution towards administrative development related to requirements of Six Sigma quality standards application at p < . (2, 0.05), value of calculated Ka2 ranged between (18.12, 112.44) and value

of relative weight ranged between phrases (207, 375).

Percentage of phrases answered (yes) ranged between (8%, 66%), percentage of phrases answered (rather) ranged between (14%, 74%), and percentage of phrases answered (no) ranged between (10%, 74%).

Table (7) shows statistically significant of all phrases of axis: senior management's contribution towards administrative development related to requirements of Six Sigma quality standards application, value of calculated Ka2 ranged between (18.12, 112.44) at $p < . (2, 0.05)$.

Administrative development begins from senior leadership, support of senior management for Sigma Six is a prerequisite for success of its applications, seriousness and enthusiasm of senior management contribute the applications of modern management methods, and disposal of old management methods, that assets the fixed conviction of management development importance through advanced administrative systems ensure output optimizing, attention of Directorate as a system from the simplest to the most complex operations.

Leader alone cannot delegate Sigma Six, Sigma Six requires support from senior management and regulatory environment provision positively which stimulate employees to production

process, when leader has a firmly convinced of importance of Sigma Six application and participate actively in all levels of management, that conveys enthusiasm to the rest of all staff members, so the leader is a positive impetus within the organization. Six sigma strategy places an unprecedented importance on strong and passionate leadership and the support required for its successful deployment (Grog Brue, 2002).

hierarchical organizing has no role on the quality practitioners in Six Sigma (Robbins & Zu Fredendall, 2006), these results on line with (Rodeny – Stewart, 2006) that improved production processes, costs reduction and disposal unnecessary activities of construction process are requirements of Six Sigma application. Support and commitment of senior management and changing the organizational culture instrumental have an important role in success of operation of applying Six Sigma (Antony, Bhaiji, 2003).

Table (8)

Frequency, percentage, value of Ka2 and phrases rank of sample response to 2nd axis: availability of training for administrative development related to requirements of Six Sigma quality standards application N=150

S	Phrases	Yes		Rather		No		Relative weight	Relative Importance	Ka2	Rank
		Freq.	*%	**Freq.	***%	**Freq.	***%				
12	There is a training plan for employees have been developed based on training needs of the Directorate.	42	28%	18	12%	90	60%	252	56.00	53.76*	5th
13	Training Programs in Directorate related directly to the course of work	42	28%	90	60%	18	12%	324	72.00	53.76*	1st
14	Employees are encouraged at the different administrative levels to develop their own skills	30	20%	99	66%	21	14%	309	68.67	72.84*	2nd
15	Sophisticated training methods in order to help job done better.	6	4%	120	80%	24	16%	282	62.67	150.24*	4th
16	Workers are trained on methods to improve the quality of performance.	9	6%	12	8%	129	86%	180	40.00	187.32*	8th
17	Promotions are linked with improving the quality of performance	12	8%	48	32%	90	60%	222	49.33	94.50*	7th
18	provided and creation of places to train workers	24	16%	51	34%	75	50%	249	55.33	26.04*	6th
19	provide qualified instructors to train employees in the directorate	54	36%	36	24%	60	40%	294	65.33	6.24*	3rd

* **Significantly different at $p < . (2, 0.05) = 5.99$**

** **Frequency**

*** **Percentage**

Table (8) shows statistically significant of value of Ka2 of sample response to axis: availability of training for administrative development related to requirements of Six Sigma quality

standards application at $p < . (2, 0.05)$, value of calculated Ka2 ranged between (6.24, 187.32), and value of relative weight ranged between phrases (180, 324).

Percentage of phrases answered (yes) ranged between (4%, 36%), percentage of phrases answered (rather) ranged between (8%, 80%), and percentage of phrases answered (no) ranged between (12%, 86%).

Table (8) shows statistically significant of all phrases of axis: availability of training for administrative development related to requirements of Six Sigma quality standards application, value of calculated Ka2 ranged between (6.24, 187.32) at $p < (2, 0.05)$.

Researcher attribute this results to the entity of workers encouraging in management levels in order to develop their own skills, but not as required development level, training programs are focusing on main work only in order to perform required tasks only, also non training on quality improving ways of performance due

to weakness of awareness of quality systems importance.

The goal is to get the maximum return on Six Sigma investment by spreading it throughout company, continuing to train employees in the Six Sigma methodology and tools to lead process improvement teams, and sustaining the exponential gains you achieve by keeping it going (Kai Yang and Basem S. Elhaik, 2003).

These results are on line with (Robbins, Zu Fredendall, 2006) in the importance of guidance, groups organizational, development and rational practitioners' quality in Six Sigma. Applying of Six Sigma is improving performance level (Morgan – John, 2006). Training is one of elements which have a basic and important role in success of operation of applying Six Sigma (Antony, Bhajji, 2003).

Table (9)

Frequency, percentage, value of Ka2 and phrases rank of sample response to 3rd axis: suitability of information systems in administrative development related to requirements of Six Sigma quality standards application N=150

S	Phrases	Yes		Rather		No		Relative weight	Relative Importance	Ka2	Rank
		Freq.	*%	**Freq.	***%	**Freq.	***%				
20	Availability in the Directorate strong information and sophisticated infrastructure linked to all departments and divisions.	51	34%	69	46%	30	20%	321	71.33	15.24*	3rd
21	Information Infrastructure contributes improving performance quality.	63	42%	57	38%	30	20%	333	74.00	12.36*	1st
22	There are modern databases in Directorate help in making decision.	18	12%	123	82%	9	6%	309	68.67	160.68*	4th
23	Work is done through computerized communication.	24	16%	99	66%	27	18%	297	66.00	72.12*	7th
24	There is an ongoing review of information systems to correct mistakes.	33	22%	33	22%	84	56%	249	55.33	34.68*	9th
25	There is electronic network in Directorate helps in performance guiding.	27	18%	30	20%	93	62%	234	52.00	55.56*	10th
26	There are alternative ways to get job completion in case of faults.	24	16%	105	70%	21	14%	303	67.33	90.84*	6th
27	Directorate of Youth and Sports in Sharkia Used modern means of communication to report references for its regions.	27	18%	102	68%	21	14%	306	68.00	81.48*	5th
28	Directorate have a human possibilities to repair technical faults related to information systems	33	22%	117	78%	0	0%	333	74.00	145.56*	1st Repeater
29	Means of communication and information technology are sufficient to perform the work of the Directorate of Youth and Sports in the Sharkia province.	18	12%	108	72%	24	16%	294	65.33	101.28*	8th

* Significantly different at $p < (2, 0.05) = 5.99$

** Frequency

*** Percentage

Table (9) shows statistically significant of value of Ka2 of sample response to axis: suitability of information systems in administrative development related to requirements of Six Sigma quality standards application at $p < . (2, 0.05)$, value of calculated Ka2 ranged between (15.24, 145.56), and value of relative weight ranged between phrases (234, 333).

Percentage of phrases answered (yes) ranged between (12%, 42%), percentage of phrases answered (rather) ranged between (20%, 82%), and percentage of phrases answered (no) ranged between (6%, 62%).

Table (9) shows statistically significant of all phrases of axis: suitability of information systems in administrative development related to requirements of Six Sigma quality standards application, value of calculated Ka2 ranged between (15.24, 145.56) at $p < . (2, 0.05)$.

Researcher attribute this results to the support for the process of data collection, either internally or externally, but data collection have no effective communication to share data and information in the Directorate, effective training

tools is not providing for employees to learn systematically of quality improvement in the Directorate, which does not help in debugging or directing performance.

Design for Six Sigma (DFSS) is a systematic methodology using tools, training, and measurements to enable the design of products, services, and processes that meet customer expectations at Six Sigma quality levels. DFSS optimizes the design process to achieve Six Sigma performance and integrates characteristics of Six Sigma methodology in product development (Westgrad, Hames O., 2002).

These results are on line with (Robbins, Zu Fredendall, 2006) that guidance is important for quality practitioners in Six Sigma. These results are on line also with (Rodeny – Stewart, 2006) that improving communication between staff members is one of applying Six Sigma requirements. Management Information Systems are one of elements which have a basic and important role in success of operation of applying Six Sigma (Antony, Bhajji, 2003).

Table (10)

Frequency, percentage, value of Ka2 and phrases rank of sample response to 4th axis: presence extent of teams work for administrative development related to requirements of Six Sigma quality standards application N=150

S	Phrases	Yes		Rather		No		Relative weight	Relative Importance	Ka2	Rank
		Freq.	*%	**Freq.	***%	**Freq.	***%				
30	Teams are formed to develop certain perceptions for performance quality in the Directorate of Youth and Sports in the Sharkia province.	54	36%	21	14%	75	50%	279	62.00	29.64*	5th
31	There are teams working at the Directorate for administrative development have the conviction of their work	39	26%	39	26%	72	48%	267	59.33	14.52*	9th
32	Trust between members of management development performance working groups.	60	40%	24	16%	66	44%	294	65.33	20.64*	4th
33	Teams work of administrative development Featuring goals commitment and values.	39	26%	51	34%	60	40%	279	62.00	4.44	5th Repeater
34	Team work members of administrative development performance have multiple specialties.	66	44%	24	16%	60	40%	306	68.00	20.64*	3rd
35	Team work members of administrative development performance have a common sense of responsibility towards the required tasks.	39	26%	36	24%	75	50%	264	58.67	18.84*	11th
36	Team work members of administrative development performance have effective and dynamic leadership.	30	20%	57	38%	63	42%	267	59.33	12.36*	9th Repeater
37	There is effective communication between Team work members of administrative development performance in directorate.	33	22%	48	32%	69	46%	264	58.67	13.08*	11th Repeater
38	Team work members of administrative development performance have insisted on improving the decisions quality.	24	16%	75	50%	51	34%	273	60.67	26.04*	7th
39	Team work members of administrative development performance willing to upgrade members' skills.	27	18%	69	46%	54	36%	273	60.67	18.12*	7th Repeater
40	Availability of incentive structure and work environment in spirit.	33	22%	30	20%	87	58%	246	54.67	41.16*	13th
41	Team work members of administrative development performance have appropriate levels of management.	54	36%	75	50%	21	14%	333	74.00	29.64*	1st
42	Issues are resolved better by team work members.	51	34%	72	48%	27	18%	324	72.00	20.28*	2nd

* *Significantly different at $p < (2, 0.05) = 5.99$*

** *Frequency*

*** *Percentage*

Table (10) shows statistically significant of value of Ka2 of sample response to axis: presence extent of teams work for administrative development related to requirements of Six Sigma quality standards application at $p < (2, 0.05)$, except phrase number (33) no statistically significant, value of calculated Ka2 ranged between (4.44, 41.16),

and value of relative weight ranged between phrases (246, 333).

Percentage of phrases answered (yes) ranged between (16%, 44%), percentage of phrases answered (rather) ranged between (14%, 50%), and percentage of phrases answered (no) ranged between (14%, 58%).

Table (10) shows statistically significant of all phrases of axis: presence extent of teams work for administrative development related to requirements of Six Sigma quality standards application, value of calculated Ka2 ranged between (4.44, 41.16) at $p < (2, 0.05)$.

Researcher attribute this results to not holding preliminary sessions to spread improvement quality systems culture and active participation for workers in each stage and review processes, also weakness of a precise criteria ensuring good choice for teams work, administration urgency accessing results before completion of

recommendations reduces chances of teams work success.

Six sigma methodology of problem solving integrates the human elements (culture change, customer focus, belt system infrastructure, etc.) and process elements (process management, statistical analysis of process data, measurement system analysis, etc.) of improvement (Antony, J.I., 2004).

These results are on line with (Antony, Bhajji, 2003) that human resources have a basic and important role in success of operation of applying Six Sigma.

Table (11)

Frequency, percentage, value of Ka2 and phrases rank of sample response to 5th axis: cooperation departments and divisions extent to develop administrative development related to requirements of Six Sigma quality standards application N=150

S	Phrases	Yes		Rather		No		Relative weight	Relative Importance	Ka2	Rank
		Freq.	*%	**Freq.	***%	**Freq.	***%				
43	Social relationships between staff members are close.	12	8%	129	86%	9	6%	303	67.33	187.32*	8th
44	There is a sense of pride for departments' enrolment which employee works.	75	50%	57	38%	18	12%	357	79.33	33.96*	1st
45	Satisfaction rate of other entities is high while dealing with the Directorate.	63	42%	63	42%	24	16%	339	75.33	20.28*	2nd
46	New information is exchanged between employees to develop work.	21	14%	75	50%	54	36%	267	29.33	29.64*	10th
47	Work environment works to remove administrative and psychological barriers between workers.	36	24%	87	58%	27	18%	309	68.67	41.88*	4th
48	Workers opinions estimated and praised.	36	24%	84	56%	30	20%	306	68.00	35.04*	7th
49	Departments and sections of the Directorate realize it's interrelated.	21	14%	102	68%	27	18%	294	65.33	81.48*	9th
50	Competition spirit between workers creates creativity.	30	20%	90	60%	30	20%	309	68.67	48.00*	4th Repeater
51	Departments and sections of the Directorate Recognize the financial and technical resources needs of each other.	30	20%	99	66%	21	14%	309	68.67	72.84*	4th Repeater
52	Directorate of Youth and Sports in Sharkia have a cooperation spirit in work completion.	36	24%	90	60%	24	16%	312	45.00	49.44*	3rd

* **Significantly different at $p < (2, 0.05) = 5.99$**

** **Frequency**

*** **Percentage**

Table (11) shows statistically significant of value of Ka2 of sample response to axis: cooperation departments and divisions extent to develop administrative development related to requirements of Six Sigma quality standards application at $p < (2, 0.05)$, value of calculated Ka2 ranged between (20.28, 187.32), and value

of relative weight ranged between phrases (267, 357).

Percentage of phrases answered (yes) ranged between (8%, 50%), percentage of phrases answered (rather) ranged between (38%, 86%),

and percentage of phrases answered (no) ranged between (6%, 36%).

Table (11) shows statistically significant of all phrases of axis: cooperation departments and divisions extent to develop administrative development related to requirements of Six Sigma quality standards application, value of calculated Ka2 ranged between (20.28, 187.32) at $p < . (2, 0.05)$.

Researcher attribute this results that workers' Directorate recognize the importance of cooperation between them in order to achieve the desired goals, this cooperation helps divisions and departments of the Directorate to identify financial and technical resources needs of departments.

Organizational culture is viewed as the pattern of values, beliefs, and assumptions shared by members in an organization, which are perceived by the organization as the valid, correct way to perceive and solve problems. These shared values, beliefs, and assumptions in the organization bind its employees together and become the manner or strategies through which the organization achieves its goals (Robbins, Zu Fredendall, 2006).

These results are on line with (Robbins, Zu Fredendall, 2006) in importance of organizational groups for quality practitioners in Six Sigma.

The proposed operational plan for development of administrative Directorate of Youth and Sport in Eastern province related to requirements of Six Sigma quality standards application

Aim	Outputs (Specific)	success indicators (Measurable)	major activities	Implementation period	
				Start	End
1 - Administrative development of directorate through senior management contribution and departments' cooperation of the Directorate.	1/A, work stimulating environment lead to performance efficiency.	1- The efficiency and effectiveness of the organization's performance. 2 - Plans to improve the level of satisfaction of employees.	1/A/1, reconfigure of departments in order to fit their qualifications, job tasks, workload and develop plans to deal with the increase or decrease.	1\1	30\3
			1/A/2, providing necessary equipment to improve the working environment and development of policies to link rewards with performance.	1\1	30\4
			1/A/3, survey ranks for future goals for the process of determining authorities, responsibilities and competences, clearly for leaders and employees of the Directorate and analysis of obtained results.	1\4	30\4
			1/A/4, measure the level of satisfaction and take immediate and effective steps to enhance the strengths and weaknesses points.	1\5	30\6
	1/B, plan for specialized services departments' development of Directorate.	1- Agendas and record of committee meetings and workshops. 2 - Completion of the formation of specialized departments. 3 – Increasing of staff satisfaction (70%). 4 – Increasing of satisfaction of beneficiaries (70%) for specialized departments for directorate services.	1/B/1, a plan to develop specialized services departments.	1\2	30\2
			1/B/2, business workshop for workers to discuss new formations.	1\3	30\3
			1/B/3, self-study and presented to an expert to determine the positions to be developed to achieve the desired goals and a plan of improving action for the administrative development.	1\4	30\6
			1/B/4, documenting administrative processes after development and preparation of a manual includes descriptions of each process, procedures and distributed to departments depending on the nature of each process and the work of a questionnaire analysis of the results obtained.	1\7	30\8
	1/C Study to determine the extent of management efficiency for utilization of human resources availability.	1- Agendas and record of committee meetings and workshops. 2 - Completion of database (70%). 3 - Improved job performance (70%). 4 - Administrative leadership satisfaction (70%). 5 –Workers and beneficiaries satisfaction (70%). 6 - A clear statistical data.	1/C/1, Review of current data inventory of qualifications and available expertise for the distribution of available human resources to the various departments of the Directorate.	1\9	30\9
			1/C/2, held a workshop for beneficiaries to determine the mechanism of information access, statistics and constant updating.	1\9	30\9
			1/C/3, business questionnaire to activate reward and punishment policies, environmental analysis and corrective actions for adoption of specialized departments.	1\10	30\12
			1/C/4, held a workshop with beneficiaries to activate amended reward and punishment policies.	1\13	30\13
			1/C/5, questionnaire to solicit the opinion of management, and a sample of beneficiaries to analyze the results and declared it.	1\16	30\17

Aim	Outputs (Specific)	success indicators (Measurable)	major activities	Implementation period	
				Start	End
2 - Administrative development of the directorate through training availability.	2/A, training plan for managerial skills development for workers and leaders of the Directorate.	1 - Specific training needs. 2 - Leaders and workers participation in training programs of managerial skills development. 3 - Performance assessment of trained leaders and workers.	2/A/1, workshops to identify the training needs of leaders and workers of the Directorate.	1\1	30\1
			2/A/2, development of appropriate annual training plan for management skills for leaders and workers in order to develop their skills.	1\2	30\3
			2/A/3, performance evaluating of trained leaders and workers through questionnaire analyzes and feedback evaluation.	1\12	30\12
			2/A/4, participations announcement of leaders and workers in training programs for managerial skills development, final questionnaires results on the bulletin board and website of the Directorate.	1\12	30\12

Aim	Outputs (Specific)	success indicators (Measurable)	major activities	Implementation period	
				Start	End
3 - Administrative development of the directorate through appropriate information systems.	3/A, databases of Directorate related to important information sites related to sports field.	1 - Data acquisition speedily. 2 - Communication and information exchange Easily between various departments of the Directorate.	3/A/1, reviews of administrative, legal information and existing databases of the Directorate.	1\6	30\8
			3/A/2, workshops to determine mechanisms of information access and operation of this system.	1\7	30\8
			3/A/3, providing modern databases of Directorate.	1\9	30\12
			3/A/4 updates and creates of informative rules and regulations as one of the controls and announcing of Directorate.	1\10	30\12
			3/A/5, Purchase modern communication techniques, provision of manuals and handbooks describes communication policy.	1\10	30\12

Aim	Outputs (Specific)	success indicators (Measurable)	major activities	Implementation period	
				Start	End
4 - Administrative development of the directorate by having teams work to develop managerial performance.	4/B, Furnished Quality Management Unit in the Directorate.	1 - leadership support for quality management systems 90% 2 - Workers satisfaction of quality unit 80%. 3 - Increased Cadres participation of quality unit 80%. 4 - Further performance improvement of quality management unit 80%.	4/B/1, working groups to develop certain perceptions of quality performance within the Directorate, formation of Quality Management internal units in the Directorate, preparation of job descriptions for each job and appointment of qualified cadres of computers maintenance.	1\1	30\3
			4/B/2, buy furniture, equipment and necessary machinery for Quality Management Directorate unit.	1\1	30\3
			4/B/3, spread awareness among leaders and workers of the Directorate for quality administrative culture by holding seminars and workshops.	1\4	30\9
			4/B/4, held a workshop for leaders and staff members of the Directorate to follow-up support and commitment to implement rules policies of procedure of the directorate quality.	1\10	30\12

This proposed operational plan for development of administrative Directorate of Youth and Sport in Eastern province related to requirements of Six Sigma quality standards application answers 6th Hypothesis.

Conclusions

1st axis: Senior management's contribution towards administrative development related to requirements of Six Sigma quality standards application:

1. There are seriously from senior management of the Directorate of disposing old ways and search for new sophisticated methods.
2. Modern technologies of senior management availability of the Directorate needed to raise performance level and business achievement.
3. Senior management encourages to get rid of unnecessary steps in the work.
4. Senior management gives the opportunity to participate in the efforts to improve performance.
5. Senior management put precise criteria to measure performance level.
6. Dependent senior management financial allocations to improve the quality of performance.
7. Senior management development praising the achievements at work.
8. Senior management reward outstanding in work.
9. Senior management benefit from developmental studies and visions for methods development of work on an ongoing basis.
10. Senior management does not allow dialogue in front of non-workers convinced modern methods of development and try to persuade them.
11. Senior management does not allow applications of modern and advanced administrative methods of the affiliated Directorate.

2nd axis: availability of training for administrative development related to requirements of Six Sigma quality standards application

1. There is no training plan for employees have been developed based on training needs of the Directorate.

2. Training Programs in Directorate related directly to the course of work.
3. Employees are encouraged at the different administrative levels to develop their own skills.
4. Workers were not trained on methods to improve the quality of performance.
5. Promotions are not linked with improving the quality of performance.
6. Not provided and creation of places to train workers.
7. Not provide qualified instructors to train employees in the directorate.

3rd axis: suitability of information systems in administrative development related to requirements of Six Sigma quality standards application:

1. Availability in the Directorate strong information and sophisticated infrastructure linked to all departments and divisions
2. Information Infrastructure contributes improving performance quality.
3. There are modern databases in Directorate help in making decision.
4. Work is done through computerized communication.
5. There is no ongoing review of information systems to correct mistakes.
6. There is no electronic network in Directorate helps in performance guiding.
7. There are alternative ways to get job completion in case of faults.
8. Directorate of Youth and Sports in Sharkia Used modern means of communication to report references for its regions.
9. Directorate have a human possibilities to repair technical faults related to information systems
10. Means of communication and information technology are sufficient to perform the work of the Directorate of Youth and Sports in the Sharkia province.

4th axis: presence extent of teams work for administrative development related to requirements of Six Sigma quality standards application

1. Teams are formed to develop certain perceptions for performance quality in the Directorate of Youth and Sports in the Sharkia province.

2. There are teams working at the Directorate for administrative development have the conviction of their work
3. Trust between members of management development performance working groups are not a lot.
4. Teams work of administrative development Featuring goals commitment and values.
5. Team work members of administrative development performance have multiple specialties.
6. Team work members of administrative development performance have a common sense of responsibility towards the required tasks.
7. Team work members of administrative development performance have no effective and dynamic leadership.
8. There is no effective communication between Team work members of administrative development performance in directorate.
9. Team work members of administrative development performance have no insisted on improving the decisions quality.
10. Team work members of administrative development performance are not willing to upgrade members' skills.
11. Unavailability of incentive structure and work environment in spirit.
12. Team work members of administrative development performance have appropriate levels of management.
13. Issues are resolved better by team work members.

5th axis: cooperation departments and divisions extent to develop administrative development related to requirements of Six Sigma quality standards application

1. Social relationships between staff members are rarely close.
2. There is a sense of pride for departments' enrolment which employee works.
3. Satisfaction rate of other entities is rarely high while dealing with the Directorate.
4. New information is exchanged between employees to develop work.
5. Work environment works rarely to remove administrative and psychological barriers between workers.
6. Workers opinions estimated and praised rarely.

7. Departments and sections of the Directorate rarely realize it's interrelated.
8. Competition spirit between workers rarely creates creativity.
9. Departments and sections of the Directorate rarely recognize the financial and technical resources needs of each other.
10. Directorate of Youth and Sports in Sharkia have a rarely cooperation spirit in work completion.

Six Sigma as a powerful business strategy has been well recognised as an imperative for achieving and sustaining operational and service excellence. While the original focus of Six Sigma was on manufacturing, today it has been widely accepted in both service and transactional processes. Although the total package may change as part of the evolutionary process, the core principles of Six Sigma will continue to grow in the future. Six sigma has made a huge impact on management and yet the academic community lags behind in its understanding of this powerful strategy. It will therefore be incumbent on academic fraternity to provide well-grounded theories to explain the phenomena of Six Sigma. In other words, Six Sigma lacks a theoretical underpinning and hence it is our responsibility as academicians to bridge the gap between the theory and practice of Six Sigma.

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