Six Sigma

(67)   .

(67)

.

:   )

(   )

(

.(0.05)

.

:   SIX SIGMA   .

Six Sigma

.

.

Lazarus &)

.(Stamps, 2002: 27

2012/1/29   23/10/2012.

.

)

(

.

Breyfogle,)

.(1999

1. :

.1)

(

.2

$(\alpha \le 0.05)$.

2.

)

.3

(

.4

$(\alpha \le 0.05)$.

3.

)

.5

(

$(\alpha \le 0.05)$.

4.

)

(

$(\alpha \le 0.05)$.

5.

.

)

.(250 :1994   )

(

.(α ≤ 0.05)

.(47 :2008   )

:1999   )

(640

:1994   )

.(5

.(16 :2009   )

(181 :2000   )

)

.(250 :1994

.

.

(Enron)

.(Arena, et al, 2006: 275)

60%

Hillison,) 1999

.(1999: 351

.

Auditing   :

Operational   Financial

Auditing(‫)‬2006: 347).

(‫)‬1998: 102)

Special Assignments Audit

: ‫ (‬2006: 346)

‫.‬

SIX SIGMA

Total Quality ‫.‬

Management : ‫ (‬2006: 348)

.(Harry, 2003: 33)

‫.‬

: ‫(‬ Motorola)

‫.‬

(‫‬

(SO GOOD)

‫.‬

(‫)‬1998: 104).

(Breyfogle, 1999: 1)

"Conformity to Requirements"

‫.‬

(Paul, 1999: 15)

3.4 (‫‬

Defects Per Million .(2008 ‫)‬103

Opportunities(DPOM) (2006 ‫)‬28)

(99.99966)

.6   :   Wooderd, 2005:)

(229

Lazarus & Stamps,)

(2002: 27

DMAIC

Definition,) DMAIC

Measurement,   Analysis,   Improvement, (Controlling

SIX SIGMA

(Pande & Holpp, 2002: 14-16)

:

.1   :

Eckes,) :

:(Pande & Holpp, 2002, 14-16   2001: 43

.1   :

.2   :

.3   :

.2   :

.4   :

)

(

.5   :

3. :

DFSS .

DFSS
.

4. : DFSS.
– (2007) "
Six Sigma
."

Six Sigma

.

Six Sigma

. .

5. :

.

100%.

. .

: .

– (Joseph,2005) " Using Design
. for Six Sigma to Design an Equipment Depot
. at A hospital". DFSS
Design for six sigma
. Six Sigm

."Sector in Qatar   .

Six Sigma

.   .

                                        "   (2009   )   –
                    .73   Six Sigma
                                                           ."

        .
    "   (2003   )   –   .
.".

                                                                    .

                                    (120)   .SPSS
                                (310)
                                                        .

                                    Six Sigma

                                                    .
        Six   "   (2010   )   –
        ."   Sigma
        Six

                                                Sigma

                                                                    3.4

                                                        .

                            (Salaheldin & Abdelwahab, 2010)   –
                            Six Sigma Practices in the Banking "

.

Internal " (Arena,et..al,2006)　　　 –
audit in Italian organizations : A multiple case
."study

.

The role " (Gerrit Sarens,2007)　　 –
of internal auditing in corporate governance
qualitative and quantitative insights on the
."influence of organizational characteristics

K

.

Using Six " (Peter & Jan,2005)　　 –
."Sigma to Improve The Finance Function

Six　Sigma

.

31.7　　　　109.3
.

:

:

.

.

.

.

A Six Sigma " (Aghili, 2009)　　 –

.

Approach to Internal Audits".

Six Sigma

DAMIC

.

:
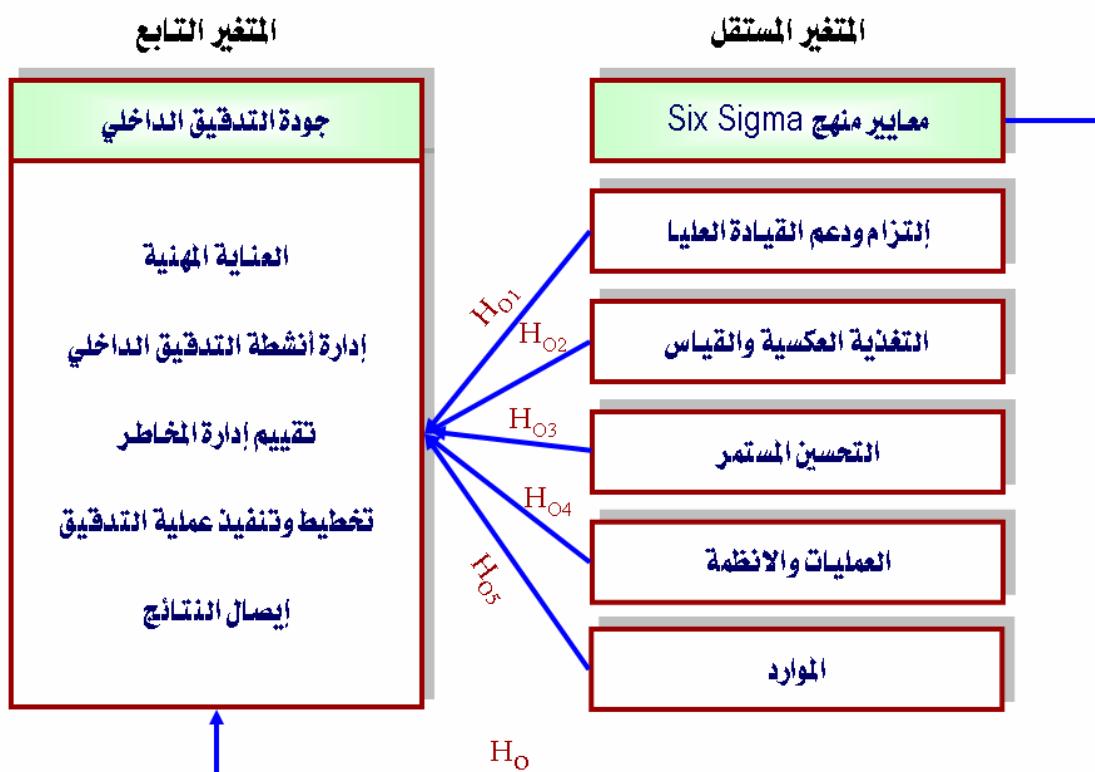
Six Sigma

.

.

(Convenience Sample)

.

(100)   (20)
(73)   (73%)
(67)
(92%)
(1)

.   .

(1)

%				
% 19.4	13	14	20	1
%.13.4	9	11	20	2
% 22.4	15	15	20	3
% 22.4	15	17	20	4
% 22.4	15	16	20	5
%100	67	73	100	

المتغير التابع	المتغير المستقل
جودة التدقيق الداخلي	معايير منهج Six Sigma
العناية المهنية	إلتزام ودعم القيادة العليا
إدارة أنشطة التدقيق الداخلي	التغذية العكسية والقياس
تقييم إدارة المخاطر	التحسين المستمر
تخطيط وتنفيذ عملية التدقيق	العمليات والانظمة
إيصال النتائج	الموارد

H_{O1} H_{O2} H_{O3} H_{O4} H_{O5} H_{O}

(1)

(   )   (3%)
                              (28%)
(   )   (3%)
Salaheldin & Abdelwahab) 23-35 :2010).
                    .

Aghili) 40 :2009).

                              (87%)
                    (7%)
(2)   (6%)   .

(46%)   (54%)
.   (92%)
.   (85%)   30   49
(% 8)   50   .
(12%)   (% 94)
(3%)   .   5   15
.   .   (% 6)
(66%)   16   .

(2):

(%)				
36	24	30		
43	29	39 – 30		1
13	9	49 –40		
8	5	50		
85	57			
12	8			2
3	2			
66	44			
3	2			3
28	19			
3	2			

(%)				
45	30	5		
48	32	10 6		4
1	1	15 11		
6	4	16		
6	4			
7	5			5
87	58			
48	32			6
52	35			
34	23			7
66	44			
22	5	CPA		
30	7	CMA		8
39	9	JSPA		
9	2	CA		

(

)

:**(3)**

t

		Sig*	"t"			
	2	0.000	11.554	0.89	4.25	
	5	0.000	9.227	0.85	4.01	
	1	0.000	11.572	0.83	4.34	
	4	0.000	12.229	0.74	4.03	
	8	0.000	5.929	1.00	3.83	
	10	0.000	5.072	0.97	3.66	
	9	0.000	5.738	0.84	3.78	

		Sig*	"t"			
7	0.000	8.204	0.72	3.91		
6	0.000	11.426	0.77	3.99		
3	0.000	12.728	0.84	4.08		

(t) (α ≤ 0.05) (1.667). (t) .(3)

(3) Six 8.

Sigma

.9

:

.1 .

.10

.2 .

.3 .

.(4).

(4)

.4 .

.5 .

.6 .

Sigma		
3.282		1
3.408		2
3.282		3
3.282		4
3.282		5

.7 .

(4) (.

,Sigma (

(4)   .(3.282)
(5)   (   )
(5)
.(3.408)   Sigma

(4)   (66.800)   (8.200)
4 3   3.282   (5)   .(%93.32)   (%99.18)
(   )

.   .
4   (5) (4)

(5)

1.042	3.125	100 52	100 52	0	200 933
1.083	3.25	100 40	100 40	0.125	450 915
1.125	3.375	400 30	400 30	0.25	400 894
1.167	3.5	700 22	700 22	0.375	700 869
1.208	3.625	800 16	800 16	0.5	300 841
1.25	3.75	200 12	200 12	0.625	200 809
1.292	3.875	800 8	800 8	0.75	400 773
1.333	4	200 6	200 6	0.875	050 734
1.375	4.125	350 4	350 4	1	500 691
1.417	4.25	000 3	000 3	1.125	650 645
1.458	4.375	050 2	050 2	1.25	700 598
1.5	4.5	300 1	300 1	1.375	750 549
1.542	4.625	900	900	1.5	000 500
1.583	4.75	600	600	1.625	250 450
1.625	4.875	400	400	1.75	300 401
1.667	5	230	230	1.875	350 354
1.708	5.125	180	180	2	500 308
1.75	5.25	130	130	2.125	950 265
1.792	5.375	80	80	2.25	600 226

					800 190
1.833	5.5	30	30	2.375	800 190
1.875	5.625	23.4	23.4	2.5	700 158
1.917	5.75	16.7	16.7	2.625	300 130
1.958	5.875	10.1	10.1	2.75	600 105
2	6	3.4	3.4	2.875	550 84
			1	3	800 66

:

)

(

:

.($\alpha \le 0.05$)

(6)

Sig*	T		B	Sig*		DF	F	(R^2)	(R)	
0.041	2.091	0.172			5					
0.033	2.175	0.223								
0.072	1.830	0.158		0.000	61		30.049	0.705	0.839	
0.589	0.530	0.050								
0.000	3.785	0.250			66					

* ($\alpha \le 0.05$)

(6)

R
R^2 .($\alpha \le 0.05$)   (0.839)   .
        (0.705)   (0.705)

:

)   (0.223)   (0.172) β

((0.158)

(0.250)   (0.050)

(0.05)

(0.172)

(0.158)   (0.223)

.   (0.250)   (0.050)

F .

:   .($\alpha \leq 0.05$)   (30.049)

(7)

Sig**	t	B	Sig*	DF	F	(R²)	(R)	
0.000	7.168	0.575	0.000	1 65 66	51.381	0.434	0.659	
0.000	9.601	0.658	0.000	1 65 66	92.178	0.586	0.766	
0.000	5.735	0.503	0.000	1 67 68	32.892	0.329	0.574	
0.000	5.836	0.597	0.000	1 67 68	34.060	0.337	0.581	
0.000	7.434	0.472	0.000	1 67 68	55.258	0.452	0.672	

($\alpha \leq 0.05$)   *

(7) R^2 (0.329)
(0.329)

: β (0.503)

:   (0.503).
F   (32.892)
.($\alpha \leq 0.05$)

R (0.659)   .($\alpha \leq 0.05$)
R^2 (0.434)   :
(0.434)

β (0.575)   )
(0.575).
(   )
R (0.581)   ($\alpha \leq$
F   (51.381)   .(0.05 R^2 (0.337)
.($\alpha \leq 0.05$)   (0.337)

: β (0.597)

(0.597).
R (0.766)   ($\alpha \leq$ F   (34.060)
R^2 (0.586)   .($\alpha \leq 0.05$)
.(0.05
(0.568)

β (0.658)   :

)
(0.658).
F   (92.178)
.($\alpha \leq 0.05$)   R (0.672)   .($\alpha \leq 0.05$)   (
R^2 (0.452)
:   (0.452)

β (0.472)

R (0.574)   ($\alpha \leq$

.(0.472)

.(0.05)   (55.258)   F

.6   .(α ≤ 0.05)

)

(

:

(0.05)   )   .1

.7

(

.(0.05)

.8   .2

)

(

.(0.05)

.   .3

)

:   (

:   .(0.05)

.1   .4

.   )

.2   (

.(0.05)

.   .5

.3   )

(

.

.4

Sigma)

. .2

( )

. .

.3

.5

. .

.4

.(0.633**)

.5

.(0.330**)

.

.6

:

.

.1

.7

.

"( ) (1998) "
" :
. : .133 – 104 :
(2009) " (1994) "
" : " :
. : .43 – 5 :32
(1999) " (2009) " Six
Sigma
" " : (2005) "
" "
.670 – 640 : . : Six Sigma " (2007)
(2003) "
"

"
342 – 370.
(2008)
:   .
(2010) "
"
662 673.

(2008)
"Six Sigma: "
(2006)
:   .

25   73: 55 – 87.
(1994) "
"
: 250

– 276.
(2000) "
"
:   .
(2009) "
"
.

(2006)

"

Aghili، Shaun، (2009)، "A Six Sigma Approach to Internal Audits"، *Strategic Finance*، Feb: 38-43.

Allegrini، Marco. & D'Onza، Giuseppe، (2003)، " Internal Auditing and Risk Assessment in Large Italian Companies: an Empirical Survey"، *International Journal of Auditing*، No. 7: 191–208.

Anbari، F.T. (2004)، Benefits, Obstacles and Future of Six Sigma Approach، **Technovation**، Vol.20، Issus. 5، pp.1-8.

Arena، Marika and Arnaboldi، Michela and Azzone، Giovanni، (2006)،"Internal audit in Italian organizations: A multiple case study"، **Managerial Auditing Journal**، Vol. 21، No. 3: 275-292.

Breyfogle، Forrest W، (1999)، "**Implementing Six Sigma: Smarter Solutions using Statistical Methods**"، John Wiley & Sons، New York، NY.

Eckes، G.A. (2001)، "**Six Sigma, The Revolution**"، John Wiley & Sons.، New York.

Gerrit، Sarens، (2007)، "**The Role of Internal Auditing in corporate governance: qualitative and quantitative insights on the influence of organizational characteristics**" Dissertation doctor.

Harry، M. (1999)، Six Sigma A Breakthrough Strategy for Profitability، **Quality Progress**، Vol.31، No.5، pp. 60-64.

Harry، M.J. (2000) 'A new definition aims to connect quality performance with financial performance'، **Quality Progress**، Vol. 33، January: 64–66.

Hillison، W.، Pacini، C.، Sinason، D. (1999)، "The internal auditor as fraud-buster"، **Managerial Audit Journal**، Vol. 14، No. 7: 351-362.

Joseph، Mari، (2005)، "*Using Design for Sigma to Design an Equipment Depot at A hospital*"، Bs، Binghamton university stat university of New York، PhD Dissertation.

Lazarus، R، and Stamps،B. (2002)،"The Promise Of Six Sigma"، **Managed Healthcare Executive**، Vol. 12، pp.27–30.

Pande، Pete & Holpp، Larry، (2002). "**What Is Six Sigma**"، McGraw- Hill، New York.

Paul، L.E، (1999)، "Practice Makes Perfect"، **CIO Enterprise**، Vol. 12 No. 7، Section 2، January 15: 2-25.

Peter، Brewer & Jan، Eighme، (2005)، "Using Six Sigma to Improve The Finance Function"، *Strategic Finance*، May: 27-33.

Salaheldin، Ismail Salaheldin & Abdelwahab، Iman Shafee، (2010)، "Six Sigma Practices in the Banking Sector in Qata"، *Global Business and Management Research: An International Journal*، Vol. 1، No. 1: 23-35.

Scalise، D.(2001)، "Six Sigma: The Quest For Quality"، **Hospitals and Health Networks** Vol. 75، No.12: 41–461.

Woodard، T.G.(2005)، Addressing Variation In Hospital Quality Is Six Sigma The Answer?، **Journal of Health Management**، July-August، Vol، 50: 226-235.

Using Six Sigma Methodology in Controlling Internal Auditing Quality(A Field Study on Award Winning Quality and Excellence Private Hospitals in Amman Governorate

Sina Al-Rawi, Abed Al-Nasir Noor, and Mohammad Al-Nuami

ABSTRACT

This study aimed at using Six Sigma Methodology in controlling Internal Auditing Quality on award-winning quality and excellence private hospitals in Amman Governate. The researchers designed a questionnaire, consisting of (67) items to gather the primary data from the study sample which is consisted of (67) individuals. The main conclusions of the study were:

There is a significant impact to Six Sigma Criteria (commitment and support of top leadership; feedback and measurement; continuous improvement; processes and systems and human resources) on quality of internal audit (professional care; managing the activities of internal audit; risk management evaluation; planning and implementation of the audit process; delivery of output) in Award Winning quality and excellence private hospitals in Amman Governate at level (0.05). The main recommendations of the study were: showing more interest in the concept of Six Sigma concept and confirming the possibility of its use in hospitals due to its importance in reducing medical errors and improving the quality of services provided which are commensurated with the expectations of clients.

KEYWORDS: Six Sigma Methodology, Qualities of Internal Auditing, Private Hospitals.