

OHSAS 18001 vs. Implementation Cost: Risks That Will Be Faced by the Organisation Management in Malaysia

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Abstract: OHSAS's implementation 18001:1999 was one method used by organization to reduce accident at workplaces other than obtains other interest. This study aimed to be looking as far as OHSAS's implementation 18001:1999 having negative impact especially from current cost consumption aspect that management system implementation. As much as 26 organisations had received certificate from SIRIM QAS BERHAD were created major respondent for this study? This study method used analysis of data use comparative test (t-test), association (Chi-square test) and relationship (Pearson correlation's test) between major variable with support variable. Apart from that study also used significance level 90% ($p = 0.05-0.10$) and 95% ($p = 0.00-0.05$) to interpret difference data produce. Result research showed that there is cost increase has to be borne by organization, while carrying out OHSAS 18001:1999 in Malaysia.

Key words: OHSAS 18001, cost, benefit, integrated management system

INTRODUCTION

OHSAS 18001 is so systematic approach includes planning activity, implementation, operation, auditing, monitoring, examination and management corrective action and reevaluation. This approach with a target to ensure organizations strengthening in implementing strategy environment were implemented and in same-time obtains certification of business strengthening. This approach and principle really is the same such as approach, which include in ISO series 14001.

OHSAS's series 18001 has 5 basic principle and 17 elements should be followed and executed by organization. To ensure security issues and occupational health altogether can be ensured, control and am being monitored through more systematic way, like ISO series implementation 9001 and ISO series 14001. Shewart and Deming model lies against on activity Plan, Do, Check and Act need to be used during OHSAS's implementation 18001 (BSI, 2007; Stapleton *et al.*, 2001; ILO, 2002). Security management and health system is based on OHSAS's series 18001 more closely to security

management and occupational health system (BS 8800) specially constructed to care employee welfare from security aspect and health also would give positive benefits to organization who implement its. Shamsul (2001) explain that there is 3 main advantage when implement OHSAS's series 18001 namely:

- Increase all employers thinking and awareness on security interest and health-by implementing this system, all employers could understand their employee situation. By not directly, organization can understand terms of safety worker's needs environment
- Enhance levels of obey to compliance law need-organization can act parallel to law need and without be worried feeling whether organization has been doing anything break the law or doing wrong
- To prove the existence of systematic arrangement in organization by carry out the policy-by implementing this system, organization could create one policy that can clarify health and safe working environment

Kadir *et al.* (2008) clarify that there are another advantages receive by the organization while implement this OHSAS series 18001 concentrated on participating of employee and the leader of organization management. This is because; the management team should recognise all the responsible for safety and health under the responsibilities of managers, supervisors and also workers side. In other way, this gives positive result from the cooperation of all staffs and also can make profit from the activities organization operation. Besides that the implementation of OHSAS series 18001 impliedly identifies all the disturbance and risks. All of these can be done through the assessment program to all the organization enthusiasm. This action can prevent the calamity from happen in the working environment.

SIRIM (2002) has been divided the benefits of implementation of OHSAS 18001 that has been accepted by organizations into 5 important points, which are increase profitability through related cost reduction with worker safety with minimize injury and disaster at workplaces; increase organizational image through to commitment security policy and occupational health and create evidence through certification achieved; reduce complaint and complaint of interested parties and shareholder; reduce security risk and occupational health and protect other parties of risk Sam and comply present legislation.

MATERIALS AND METHODS

Organization and put sample selection organization of this research is focused to 26 organisations namely organization had received system recognition security management and occupational health (OHSAS 18001:1999) From SIRIM Berhad. While specification fraction organization also divided into respective organisation products namely electric and electronic (7), engineering (1), scientific (13) and service (5). Questionnaire had been distributed to that organization and it has analyzed using SPSS VERSI 11.0. This study method used analysis of data use comparative test (t-test), association (Chi-square test) and relationship (Pearson correlation test) between support major variable and variable. Apart from that study also used significant level 90% ($p = 0.05-0.10$) and 95% ($p = 0.00-0.05$) to interpret difference data produce. This is because generally, researcher accepts this significant level on data obtained at field (McGrew and Monroe, 1993; Rahim, 1999; Nachmias and Nachmias, 2007).

RESULTS AND DISCUSSION

All 26 organisations be made this research respondent states that they experience problem, forced to

put up special provision fund to finance OHSAS series's implementation 18001 (Table 1). This is because OHSAS series's implementations 18001 need high costs. This statement is supported when as much as 92.3% organization states that they forced spent high costs between RM 40,000.00-80,000.00 until succeed obtain certification.

From the fragment aspects through the background, all organisations from the electric and electronic sector, engineering and scientific have this problem and 66.7% of the organisation from the services sector have to face these problems and not to others. From the scale, 100% multinational organisations said yes and for the big scale organisations, which are 77.8% and the balance said no. From the ownership aspect, 94.4% is from Malaysia, 75% is Europe Union organisation and 100% organisation is Japan have receive the problems of high cost when implement this OHSAS series 18001. Look from the marketing aspects, 86.7% that appoint Malaysia as main market place, have to face this situation also for those appoint the Europe Union Organisation as a product market and have to face the high cost problems. In brief, the problem of implementation of OHSAS can refer to the Table 1.

Lacks of expertise: The beginning of analysis shows that exist the differences of the way to get the expertise from those organisation. Half of the organisation have to face this problem and to others. For example, a big portion (83.3%) from the organisation produce scientific products face this problem in choosing the expertise and not hard for the engineering sectors to choose their expertise.

Should there the problems arise because of the scale of produce, ownership and the market destination. From this beginning analysis, there are 2 questions; 1st, what are the special features that differ from each other in get the expertise? And 2nd, is the significance in these differences? And 3rd, what are the courses of these differences? In answering these questions, the statistic, relevance test has been conduct, for example, Chi-square test, t-test and Pearson correlation test. Statistical analysis through Chi-square test on data, find that there are no significance difference in 95% ($p = 0.05$) or on 90% (0.10).

In the same time, t-test has been conduct to figure out on the problem of lacks of expertise according to the duration of operation (new or old) the costs of organization (big or small) number of workers (many or not) and the duration of implementation of OHSAS 18001 (new or old). The t-test proves that there are no significance differences between the problems and the features of the organizations. From the number of workers for example, the value of t is -0.430 and this value is not significance for the 90% at least ($p = 0.67$). Looking deeply

Table 1: Implementation problems on OHSAS's series18001 in Malaysia according to organisations

Problems	Yes		No	
	Quantity	(%)	Quantity	(%)
Lacks of expertise	19	73.1	7	26.9
Forced to appoint consultant	19	73.1	7	26.9
High posts	24	92.3	2	7.7
Special provision funds	26	100.0	-	-
Lacks of allocations	22	84.6	4	15.4
Costs from other sources	4	15.4	5	19.2
Many of paper works	26	100.0	-	-
Need more much time	26	100.0	-	-
To disturb other work	19	73.1	7	26.9

into the data, the organisation that claimed they don't have much expertise accumulate is 715.2 people and the organisation that claimed have not enough workers is 842.8 people. This show negatively on the differences either has enough workers or not.

The hypothesis of the study suggest, should be there connection between the number of expertise with the some features of the organisation such as the duration of the operation (new or old), cost (big or small), number of workers (many or little) and the duration of implementation of OHSAS 18001 (new or old). All the variables exist in interval scale, which is why Pearson correlation test has been used. The result of the analysis shows negatively the significance of correlation between the need with the problems in adding the numbers of expertise with the background of organisation. For example, from the cost aspect, value of coefficient r from total 0.377 and the value is not significance to the level 90% (p = 0.27). These prove no significance correlation either the organisation have invest big or small amount of cost. Everywhere shows the problems of lacks of workers in implement the OHSAS 18001. Besides the fact that the implementation of OHSAS 18001, they were influence also by the problems of lacks of the expertise.

Consultant appointment: The study proves that there are differences between the organisations in managing their arrangement of the consultant appointment for their organisation. For example, the big scale organisations have to find out the consultant is 88.9% whereas only 41.2% multinational organisations have to face these problems. The differences also were found in appoint the consultant difference from the type of products, ownership and the destination of market. Of this early analysis, are several issue namely, 1st, what feature distinctive than those problem aspect use consultancy service; 2nd, do these variations are significant; 3rd, what which resulted these variations. Table 2 shows Chi-square analysis to test either there are significant difference among organization differences from product type aspect,

Table 2: Correlation between problems had to exercise consultant with organisation's background

Features of organisation	Chi-square test	Sig.	dk
Types of product	5.076	0.16	3
Scale	5.488	0.01	1
Ownership	3.467	0.17	2
Marketing	8.656	0.01	2

scale, ownership and market destination problem-with had to exercise consultancy service in effort implement OHSAS's series 18001.

Analysis result show does not exist correlation between that problem of product type and organisation ownership aspect (Table 2). However, correlation significant traceable of scale and direction aspect market. As for scale aspect, value chi power is 5.488 in degree of freedom 1 and this value is significant in level at least 95% (p = 0.01). In other words, organization scale either multinational or large will receive this problem. Of market direction side also, Chi-square value was 8.656 in degree of freedom 2 and this value is significant in level 95% (p = 0.01). This also proved that correlation live significant between problems had to exercise consultant with organisation's market direction either in country, ASEAN or European Union. These problems arise when organization push for OHSAS's series certification 18001 as soon as possible without taking into account cost and constraint forced to face. There are number organizations looked into use consultancy service from abroad and already sure implementation cost was high.

However, analysis result t-test to know do were differences between this problem with organization background of operation, total workers and implementation period duration aspect OHSAS's series 18001 produces results that does not exist significant difference with that organization all features. For example from capital total aspect for example, value t produce was -1.214 and it is no significant in level at least 90% (p = 0.23). Organization which states had to exercise consultant have capital by his average RM 790,000 and organization, which states do not have capital by his average RM 1.6 million. As for ompany with capital large is not being a problem to produce expenditure to pay OHSAS's consultant 18001 provided that OHSAS's series certification 18001 successful achieved.

Cost increase problem implementation: High cost consumption problem in implementation in process management system whether ISO 9000 and 14000 of course undeniable. The matter also occurs in implementation in process OHSAS's series 18001. Based on initial analysis was found live possibility difference among different organization his features from cost problem aspect high implementation. All organization from

which sector manufacture products electric and electronics type, engineering and scientific found facing problem get expertise whereas among kind of service organization only 66.7% tackles this problem. Survey on data also found live possibility variations had to exercise high costs among organization differ with respect to production scale, ownership and market destination.

Chi-square test was done to test hypothesis do be association between this problem with organization background of product type aspect, scale, marketing ownership and direction. Analysis result performs in Table 3. Found that does not exist significant association of market ownership side and direction. But significant association traceable of product type and scale aspect organization. of product type aspect, Chi-square value 7.222 in degree of freedom 3 and this value was significant in level at least 90% ($p = 0.06$). This shows that actually exist association between high cost consumption problem by product type whether electric and electronic, engineering, scientific and service. This due to willingness factors that organization to pay over to achieve OHSAS series's certification 18001. Of scale aspect organization also, Chi-square value was 4.093 in degree of freedom 1 and this value is significant in level 95% ($p = 0.04$). This also proved that indeed exist significant association of high cost consumption problem aspect with organization scale whether multinational or large on same reason.

T-test also was carried out to test hypothesis do were differences between high cost consumption problem with operation period, capital, total workers and implementation period number OHSAS's series 18001. Result of analysis show did not exist significant difference with background all features organization. For example, of operation duration aspect for example, value t am being recorded was -0.354 and it no significant in level at least 90% ($p = 0.72$). Organization experience cost increase problem already operating by his average is long 13 years and organization, which states no already operating by his average is long 16 years. organization altogether looked into having to live with high costs when implement OHSAS's series 18001 to achieve OHSAS's series certification 18001 on use reasons consultancy service and send their staff undergo training such as course and seminars.

Correlation analysis results Pearson are such as in Table 4. Correlation Pearson carried out to test hypothesis do be relationship between implementation cost increase OHSAS's series 18001 with organization background of period aspect operation, capital, total workers and implementation period number OHSAS's series 18001. Correlation analysis result Pearson show does not exist

Table 3: Connections between cost problem high implementation with organisation's background

Organization features	Chi-square test	Sig.	dk
Types of products	7.222	0.06	3
Scale	4.093	0.04	1
Ownership	2.137	0.34	2
Marketing	1.589	0.45	2

Table 4: Interrelationships cost increase per month with organization background

Organisation features	R	Sig.	N
Cost increase vs. operation period	0.434	0.10	26
Cost increase vs. total capital	-0.147	0.60	26
Cost increase vs. workers	0.628	0.01	26
Cost increase vs.	-0.158	0.57	26

OHSAS 18001 implementation period

significant relationship between cost increase with organization background of amount aspect series capital and implementation period OHSAS 18001. However, significant relationship traceable of operation and total workers duration aspect. Of operation period for example, coefficient value r was 0.434 and this value is significant in level at least 90% ($p = 0.10$). This show that whether organization looked into is organization with capital large or would not be still face cost increase problem implementation because every organization having to pay with in process money value OHSAS's series implementation 18001. Of implementation period aspect OHSAS's series 18001, coefficient value r produce was -0.157 and this value is significant in level 95% ($p = 0.01$). this prove that be significant relationship between cost increase with OHSAS's series implementation period 18001 whether that organization is new or long implement OHSAS's series 18001. OHSAS's series implementation period 18001 by no effect organization to his implementation cost because most organizations having allocation fund, respectively.

Problem lacking of allocation: Cost increase experienced by organization when implement OHSAS's series 18001 effects to allocation prepared when implementation cost also increase. As much as 84.6% organization said allocation prepared not enough. Due to this to determine association between these problems with different organization background of product type aspect, scale, market ownership and direction Chi-square test was carried out.

Analysis result performs in Table 5 found does not exist significant association of product type and scale aspect organization. But significant association traceable of market ownership side and direction. Of ownership side, Chi-square value was 4.662 in degree of freedom 2 and this value is significant in level at least 90% ($p = 0.09$). This shows that not enough allocation problems were not only experienced by Malaysia but also organization from

Table 5: Connections between allocation problem lacking with organization background

Organisation features	Chi-square test	Sig.	dk
Product types	2.955	0.39	3
Scale	0.193	0.66	1
Ownership	4.662	0.09	2
Marketing	7.564	0.02	2

union Europe and Japan. It still influenced by due to implementation cost high consumption. From market direction side, Chi-square value am being recorded was 7.564 in degree of freedom 2 and this value is significant in level 95% ($p = 0.02$). This proves that any organization market products and their services inside country or overseas also exposed to this problem. This is because high cost consumption in implementation in process OHSAS's series 18001 does not take into account whether that organization only market products and their services in country or to overseas.

T-test also was carried out to test hypothesis do were differences between allocation problem lacking with operation period, capital, total workers and implementation period number OHSAS's series 18001. Result of analysis show did not exist significant difference with background all features organization. For example, from operation duration aspect for example, value t am being recorded was as much as 0.326 and it is no significant in level at least 90% ($p = 0.74$). Organization experience allocation problem lacking already operating by his average is long 13 years and organization, which states no already operating by his average is long 12 years. This mean does not exist difference between organisations whether long or have just operated with allocation problem lacking. Organization altogether found to have tried obtaining OHSAS's series certification 18001 and willing to produce great cost to achieve this objective.

Problem cause by implementation cost: All organisations on the sector of manufacturing of the electrical and electronics products and also engineering industry have been identified facing problem to secure additional funding in order to implementation it. Whereas only 16% scientific sector organisation contend against this problem. Observation on data also found live possibility difference forced accommodate implementation cost of other source among organization differ with respect to product type, ownership and market destination. Table 6 show Chi-square analysis to test whether there is significant difference among different organization of product type aspect, scale, ownership and market destination problem-with accommodate implementation cost from other source in effort implement series OHSAS 18001.

Table 6: Correlation between problem forced accommodate implementation cost with organisation's background

Organisation features	Chi-square test	Sig.	dk
Product types	10.833	0.09	6
Scale	3.973	0.23	2
Ownership	6.602	0.25	4
Marketing	9.380	0.05	4

Analysis result found does not exist significant association of scale and organisation ownership aspect. But significant association traceable of product type and direction aspect market. Of product type aspect, Chi-square value was 10.833 in degree of freedom 6 and this value is significant in level at least 90% ($p = 0.09$). This shows that problem forced to bear the cost from other source not only undergone by organization based on electric and electronic but also by scientific organisation, engineering and service. From market direction side, Chi-square value am being recorded was 9.380 in degree of freedom 4 and this value is significant in level 95% ($p = 0.05$). This proves that any organization market products and their services in country or overseas also exposed to this problem.

Test result, t carried out like those in show through Table 7 found there were no significant difference from operation duration aspect, capital and implementation period number OHSAS's series 18001. However, significant difference traceable of total workers aspect when value t in record was 2.900 and this value is significant in level at least 95% ($p = 0.02$). Looked with profounder on data, organization which states experience problem of forced to bear the cost from other source having total workers by its average its as many as 605 people and organization which states no having total workers by his average is as many as 377 people. This shows that organization which possesses total workers that does not many does not face this problem. This might be influenced by other cost factor (salary and employee wages) forced in pay more compared organization have to be paid more compared under organization number of workers.

Correlation analysis results Pearson is such as perform in Table 8. Correlation Pearson carried out to test hypothesis do be relationship between ready allocation with organization background of period aspect operation, capital, total workers and implementation period number OHSAS's series 18001. Result analytical correlation Pearson show does not exist significant relationship between existing allocation with organization background from amount aspect capital and total workers. However, significant relationship traceable of operation and implementation period duration aspect OHSAS's series 18001. From operation duration aspect for example, coefficient value r was 0.033 and this value is significant

Table 7: Distinctions between accommodate implementation cost with organisation's background

Organisation features	t-test	Sig.
Operation duration	-0.298	0.77
Total cost	-0.876	0.41
Total workers	2.900	0.02
Duration of implementation OHSAS 18001	-0.454	0.66

Table 8: Interrelationships allocation prepared with organisation's background

Organisation features	r	Sig.	N
Existing allocation vs. operation duration	0.033	0.09	26
Existing allocation vs. total cost	-0.056	0.78	26
Existing allocation vs. total workers	0.028	0.84	26
Existing allocation vs. duration of implementation OHSAS 18001	0.021	0.07	26

in level at least 90% ($p = 0.09$). This show that whether organization looked into is organization has long operating or would not be regular having significant relationship with total allocation that is prepared. Are found that the longer that organization operating increasingly higher cost lacking. This situation is influenced by seriousness factor that organization to obtain OHSAS's series certification 18001. From implementation period aspect OHSAS's series 18001, coefficient value r produce was -0.021 and this value is significant in level at least 90% ($p = 0.07$). Difference existence this significant was brought growing, which cost must paid whether from work of staff claim aspect, documentation process and care OHSAS's series 18001.

Integrated Management System (IMS)

Way out towards solution: Due to cost increase problem faced by organization when implement OHSAS 18001, organization actually during find alternative other management system to on the safe side present (Kadir *et al.*, 2003a, b). Due to this, Integrated Management System's emergence (IMS), which account management system combine ISO 14001, 9001 and OHSAS 18001 perceived as road the best, which is can be selected by organization. In fact in developed countries like Germany, United Kingdom and Singapore had already encouraged respective organization to implement IMS (Kadir, 2004a, b).

IMS is a process, procedure and practice merger used by an organization to implement that organization policy where organization will be more efficient in achieving objective and policy compared management system behave various (Standard Australia International, 1999). IMS not just is system collection separated his nature. Welford and Gouldson (1993) stated that IMS is one management system must behave as whole, understood and open. Comprehensive mean cover all activities of the organization, understood mean accepted and are

understood by all organization member and open mean senior management may make reevaluation by 1 flow 2 directions. Waite *et al.* (1998) explain that this integration is very important to identify either outstanding feature to successful organization. While, Griffith (2000) explain that IMS was organizational structure, source and procedure serves to planning and control of quality, security and environment one project.

IQA (1999) emphasized that IMS could be achieved by using a few important approach;

- Develop policy, procedure and document on quality, environment, health and security and all business risk
- Train staffs at all organization level to reciprocal connect quality elements, environment, security and health
- Preferred to inside process approach implement management system

Although, there are several differences in management system approach usage integrated between quality management system, environmental management and system security management and occupational health, by his total it still could give strength to involved management system. Many benefits obtained with implement IMS (Hofman and Trory, 1996; Standard Australia International, 1999; Glen and Douglas, 2000; Kadir and Jahi, 2004).

Effective efficiency enhancement and cost: With IMS's implementation it provides system comprehensive and this facilitates control, management system care and progress. When IMS executed by its organization lay to established and stabilize comprehensive objective, process and simplified system combination new management or shareholder need. It also will reduce time serves to auditing jobs by internal audit or external audit.

Under working paper and documentation: Major development of procedures integration in organization will avoid overlapping existence same procedure to activity and this would still reduce problem document which contradict. Indirectly it also is able to simplified control on documentation and working paper.

Employee involvement more effective: Easier employee to refer to procedure and be able to optimize training. IMS also introduce approach 'cross functional' to increase and improve all procedures and set aside unrelated system or discipline.

Offset objective which contradict: IMS also able minimize source deflection allocation in system together and power system spread due to departmental factor different. If expertise of different discipline can work as a team, it would create strength and would issue more effective decision. Fogginess indirectly will reduce emergence of same problem in other department.

Increase flexibility: IMS's emergence based on with flexible nature. Due to this it easy updated when the need or demand for change was whether from process aspects, standard or market. When process changed that effect due to change easily could meet standards need.

Reduce time implementation: Time used for IMS's implementation is less compared implementation one by one other management system.

Create environmental awareness: IMS's emergence in fact also based on by nature unite environmental awareness with aspects of quality and safety employee. This causes it able to be accepted by organization.

CONCLUSION

By his total through feedback received of respondent actually exist apparent cost increase due to implement security management and occupational health system (OHSAS 18001) in Malaysia.

Although at the same time, organization received several particular interests but cost increase problem is highly critical problem for them. Live problem due to security management and occupational health system implementation (OHSAS 18001) had caused organization just looking for other alternative to overcome this problem and at the same time received greater advantage of IMS.

IMS's formation also actually in keeping with programs are suggested by Agenda 21 to achieve development goals continuously and at the same time afford create environmental awareness among organization in Malaysia.

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