

THE IMPLEMENTATION OF INTEGRATED MANAGEMENT SYSTEMS (IMS) IN CONSTRUCTION ORGANIZATIONS IN MALAYSIA

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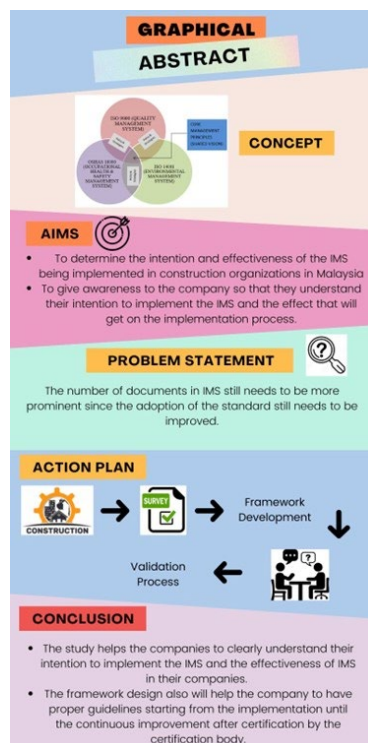
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Graphical abstract



Abstract

An Integrated Management System (IMS) combines different management systems into one complete system. This paper aims to determine the intention and effectiveness of the IMS being implemented in construction organizations in Malaysia. The problem statement in this study is the number of documents in IMS still needs to be more prominent since the adoption of the standard still needs to be improved. This study aims to give awareness to the company so that they understand their intention to implement the IMS and the effect that will get on the implementation process. This study also will provide a framework that will be a guideline for the company to start with the implementation process and be certified as an IMS company. This study used quantitative and qualitative study methods. The study takes place on the construction company in Klang Valley that implemented the IMS. The survey has been done for the quantitative study to check on the understanding of the company for the intention and effectiveness of the IMS implementation. Meanwhile, for the qualitative study, the semi-structured interview session was done with five subject matter experts (SMEs) in the IMS implantation. The interview validates the research process and the framework's effectiveness. As a result, the study helps the companies to clearly understand their intention to implement the IMS and the effectiveness of IMS in their companies. The framework design also will help the company to have proper guidelines starting from the implementation until the continuous improvement after certification by the certification body.

Keywords: Integrated Management System (IMS), Construction Management, Project Management, Management System, International Organization Standard (ISO)

Abstrak

Sistem Pengurusan Bersepadu (IMS) menggabungkan sistem pengurusan yang berbeza ke dalam satu sistem yang lengkap. Kertas kerja ini bertujuan untuk menentukan tujuan dan keberkesanan IMS yang sedang dilaksanakan dalam organisasi pembinaan di Malaysia. Pernyataan masalah dalam kajian ini ialah bilangan dokumen dalam IMS masih perlu lebih menonjol memandangkan penggunaan piawaian tersebut masih perlu diperbaiki. Kajian ini bertujuan untuk memberi kesedaran kepada syarikat supaya mereka memahami tujuan mereka untuk melaksanakan IMS dan kesannya terhadap proses pelaksanaan. Kajian ini juga akan menyediakan rangka kerja yang akan menjadi garis panduan bagi syarikat untuk memulakan proses pelaksanaan dan diperakui sebagai syarikat IMS. Kajian ini menggunakan kaedah kajian kuantitatif dan kualitatif. Kajian ini dijalankan ke atas syarikat pembinaan di Lembah Klang yang melaksanakan IMS. Kaji selidik ini telah dilakukan untuk kajian kuantitatif untuk memeriksa pemahaman syarikat untuk tujuan dan keberkesanan pelaksanaan IMS. Sementara itu, bagi kajian kualitatif, sesi temuduga separa berstruktur telah dilakukan bersama lima pakar bidang dalam implantasi IMS. Temu bual ini mengesahkan proses penyelidikan dan keberkesanan rangka

kerja. Akibatnya, kajian ini membantu syarikat-syarikat untuk memahami dengan jelas niat mereka untuk melaksanakan IMS dan keberkesanan IMS di syarikat mereka. Reka bentuk rangka kerja juga akan membantu syarikat untuk mempunyai garis panduan yang betul bermula dari pelaksanaan sehingga peningkatan berterusan selepas pensijilan oleh badan pensijilan.

Kata kunci: Sistem Pengurusan Bersepadu (IMS), Pengurusan Pembinaan, Pengurusan Projek, Sistem Pengurusan, Pertubuhan Pemiawaian Antarabangsa (ISO)

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1.0 INTRODUCTION

Management System Standards (MSS) are explained as voluntary regulations, procedures, or rules implemented by the organization. It is the function to detail, standardize, and regulate a varied management process set. It will also be categorized from technological criteria and spec based on the procedure or product concern to satisfy. There are various types of MSS like Quality Management System (QMS), Environmental Management System (EMS), Occupational Health Safety Management System (OHSMS) and others. These standards typically consist of an identical technique related to the formation, framework, and application procedure and will be controlled and guided by the mediator (Barbosa et al., 2021).

Most businesses, especially small and medium-sized ones, require management systems. The MS is crucial since companies will face obstacles in various industries currently dominated by more established, well-known businesses. One method to lessen restrictions and maintain industries is the Integrated Management System (IMS). IMS was created to assist companies in the development of their corporate culture (Magd and Karyamsetty, 2020). From here, for businesses to completely comprehend the advantages of IMS adoption, they must assess the efficiency of the IMS applied in their business.

The British Standards Institution Americas (BSIA) defines an IM) as a comprehensive framework incorporating various organizational systems and processes to guarantee that it operates as a single segment with integrated goals. The practical and organized setup of an organization makes up IMS. Figure 1 (Acuna, 2019) depicts the IMS Venn Diagram comprising the three fundamental MSS.

Based on Acuna (2019), IMS is the MS that assimilates every module in the business into a solitary articulate system to support its resolution and operation (Acuna, 2019). The decision that affects the organization's consequence considers a part of the MS. Hence, an element such as environment, quality, personnel, health and safety, security, finances and other essential feature needs to participate based on the current situation known as IMS. Therefore, in IMS, all documents and processes described must be integrated.

Due to the idea that quality is the most crucial factor in company determination, most businesses have embraced quality management systems during the past few decades. The newly mandated OHSMS and EMS supplement the current quality management system. The integrity and relationships of the three-core MS create the IMS that satisfies all of the requirements of the various management systems (Karkalikova and Strhan, 2018). Organizations must be clear about their intentions for implementing IMS to get around the restriction and expand their business.

The number of documents in IMS still needs to be more prominent since the adoption of the standard is still less. Therefore, the combinations between the MSS need to stress. The companies need to understand the benefit of the integrated approach due to the establishment of environmental concerns, quality and staff protection. Then, the requirement to follow the combined standards is accentuated (Magd and Karyamsetty, 2020).

From the survey on the different search engines done in November 2021, studies that have been done using the keyword or search string of "Integrated Management System" OR "Combination Management System" is considered less. In Emerald Insights (120,000 studies), IEEE Xplore (61,653 studies), Sage Journals (111 studies), Science Direct (1,321 studies), Scopus (1,488 studies) and SpringerLink (837,967 studies).

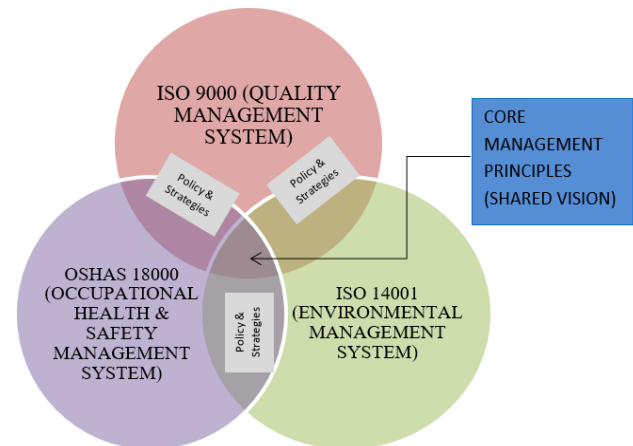


Figure 1 Venn Diagram of IMS

2.0 LITERATURE REVIEW

To have a better understanding on the IMS, a theoretical framework study has been done relevant to the IMS. The findings from this theoretical analyzed explain in the details. Firstly, it will explain on the definitions and concept of IMS.

According to the ISO, most businesses worldwide have adopted and certified various standardized MS. As a result, more organizations are joining the MS regularly. This predicament is because different interested parties' needs were met while innovating on their efficacy. The value of their invention can be increased based on the organization's capacity to continuously advance and revolutionize the results and practices of the management system. In contrast, the management will face obstacles as the various management systems are implemented. As a result, IMS will develop an effective way to systematize all

of the methods, including QMS, Social Accountability, OSHMS, EMS, and other systems (Bravi et al., 2019).

The term "IMS" refers to combining various complicated MS functions into a single, highly effective IMS. Regardless of the unsettled state of QMS in the field, IMS comprises a MS that correlates to quality and reviews through the combination procedure. The main attributes that can be acknowledged in IMS are application policy, combination technique, stage of integration, and assessment integration (Barbosa et al., 2021).

The IMS is a MS that aids the organization's ability to make informed decisions, boost process productivity, enlarge corporate structure, and enhance employee procedures and practices. The benefits of using IMS are shown in Tables 1 and Tables 2 (Ronalter and Bernado, 2023).

For the addition of MSS in the organization, various parameters are required other than capability, resource accessibility, proficiency, and change implementation. Other parameters are the category and nature of the company, intricacy of business, type of combination, the kind of business processes, and procedures of the companies targeting to do various MSS. The disadvantage is that the mix of MSS and IMS applications shown in Table 3 and Table 4 is divided by internal and external weaknesses (Karanikas and Steele, 2020).

Table 1 Internal advantages from IMS implementation

Internal Advantages	Explanation
Functional	<ul style="list-style-type: none"> • Reduce paperwork, avoid duplication, and reduce documentation • Higher level of productivity at work • Justify the processes and systems. • Time must be reduced and optimized while applying for management systems. • Integration of audits and training Mutual improvement plan • Enhances all organizational processes • Relationship between MSS
Financial	<ul style="list-style-type: none"> • Reductions in the costs of operations, procedures, and insurance premiums. • Assimilation costs can be reduced, and there are fewer audits overall. • Reduction of accreditation fees
Organizational	<ul style="list-style-type: none"> • Well-structured human resource management • Improve the global organizational strategy • An organization's knowledge and progress are advanced by wise resource allocation. • Effective resource use • Direct task classification • Boost internal advancements inside the organizations • Function to achieve long-term success • Strategically planning • General explanation • Better departmental communication
Other	<ul style="list-style-type: none"> • Encourages collaboration • Enhanced choices to include new systems • Bolster the self-assurance and compassion of employees • Cultural evolution • Improvement of environmental, quality, and health standards

Table 2 External advantages from IMS implementation

External Advantages	Explanation
Commercial	<ul style="list-style-type: none"> • Increased customer satisfaction • Satisfied with the recipients • Improved corporate image • In advance for your benefit
Statutory	<ul style="list-style-type: none"> • A necessity for business • Better in terms of quality, environment, and health and safety

Table 3 Internal Disadvantages in IMS implementation

Internal Disadvantages	Explanation
Regulations and Resources	<ul style="list-style-type: none"> • Finance and human resources need to be increased. • insufficient expertise, knowledge, and direction • Time constraints combined with time suspensions • Absence of organizational and managerial support • Lack of a strategic arrangement • Insufficient competent assessors and inadequate audit processes
Public	<ul style="list-style-type: none"> • Lack of the proper mindset and awareness • Lack of inspiration among the workforce • The staff's rejection of the new system • Staff members clash over the loss of particular roles. • Not being conscious
Application	<ul style="list-style-type: none"> • MSS of many types - Individual systems that contrast • Every MSS is arranged differently, with various combination ideas and no strategies. • Reduced adaptability following implementation Increase in manners following weaving together • The possibility of a function for every MSS needed to meet the objectives.

Table 4 External Disadvantages in IMS implementation

External Disadvantages	Explanation
Economics	<ul style="list-style-type: none"> • Advantages and a lack of motivation • The value of IMS is unpredictable.
Social and constitutional	<ul style="list-style-type: none"> • Insufficient detail and breadth • There are no IMS data. • Various requests from various investors • Frequently changing the tactics and process • Inability to access the IMS process • No publicly available statistics
Ethnic	<ul style="list-style-type: none"> • Need for a social revolution • Less collaboration and dialogue • Values are evolving, and nature is diverse

3.0 METHODOLOGY

This research's main objective is to increase the number of construction organizations in Malaysia implementing the IMS. Therefore, to achieve the target to solve this research question, the specific research objective has been identified that are to determine the IMS being implemented in the construction organization, to evaluate the effectiveness of the IMS implemented in the construction organization and to develop a framework that functionally improves the IMS implementation and adoption in the construction organization.

Based on the number of construction companies registered in the Centralized Information Management System (CIMS) of the Construction Industry Development Board (CIDB) that focuses on Klang Valley. The companies are categorized from grade one to grade seven. This study's samples only focus on companies from grade three to grade seven. The total number is 8843 (CIMS, 2022). Of the entire companies, the number of companies with a website is 476. Therefore, based on the website, there are only 78 companies that implemented IMS. The minimum sample size of the respondents acceptable for this study is shown in Equation 1.1 based on the formula from Krejcie and Morgan (1970). Therefore, the minimum sample size is 65 respondents. This study used quantitative and qualitative study methods. Therefore, it will separate into phase one for the quantitative study and phase two for the qualitative study methods.

$$\begin{aligned}
 \text{Sample size, } n &= \frac{X^2 NP(1 - P)}{d^2(N - 1) + X^2 P(1 - P)} \\
 n &= \frac{(1.96)^2 (78)(0.5)(1 - 0.50)}{(0.05)^2(78 - 1) + (1.96)^2 (0.50)(1 - 0.50)} \\
 n &= 65
 \end{aligned}$$

Where,
 n = Sample size
 N = Population size
 p = Proportion of Population (if unknown = 0.5)
 e = Acceptable sampling error
 X2 = Chi-square for the desired confidence level at 1 degree of freedom

Equation 1.1: Sample size calculation

3.1 Phase One – Quantitative Study

In this research study, the main idea is to determine how to improve the IMS implementation in the construction organization in Malaysia by using a questionnaire method. Therefore, it was used as a query tactic to accomplish these study objectives. The questionnaire has been designed based on three fundamentals that regulate the question to be asked, choose the type of question and the best wording to be used and design the questionnaire stage in the best layout. For the overall layout, the questionnaire is divided into sections: Section A and Section B. Section B will separate into Parts 1 on the intention of IMS implementation in construction organization and Part 2 on the effectiveness of IMS implementation in the construction organization.

Section A used the demographic inquiry to comprehend the correspondent's background better. The respondent's employment history, IMS implementation, and corporate types

are all addressed in the questions. The demographic question is utilized when the questionnaire asks a single question and calls for several possible solutions (Cameron and Stinson, 2019).

The Likert scale is the most appropriate method in Section B for the two distinct portions. The Likert scale is a set of questions used to determine whether a scenario is real or hypothetical and therefore needs to be researched. Based on their comprehension of the concerns, the correspondent used a metric scale of one to five to rank their response to the question (Lailatul and et al., 2023). The metric scale runs from strongly disagree to agree for both segments strongly.

Table 5 shows the method of analysis used in the quantitative research study's second phase. It shows the three different methods of analysis used in these studies.

Table 5 Methods of analysis

Method of Analysis	Aims	Research Objective (RO)
Relative Important Index (RII)	To regulate the comparative ranking of the quality aspects participating.	RO1, RO2 and RO3
Principal Component Analysis	To extract the critical data from the statistical data and signify it into the new principal components. To show the comparison between the observations and variables as facts in the table.	RO1 and RO2
Factor Analysis	To disclose the core structure of the data and clarify the variance in the data	RO1 and RO2
Pearson Product Moment Correlation Coefficient	To measure the linear relationship between two variables and draw a line of that fixed in the data of two variables.	RO1 and RO2

3.2 Phase Two – Quantitative Study

To better understand the framework created for increasing the adoption and execution of the IMS in the construction organization, this study employs qualitative research. The acceptable method for this investigation has been the interview. According to Ospina and Wagner (2004), in qualitative research, the correspondence's disparate backgrounds symbolize various interpretive communities. The many sorts of letters from various sectors invited for the interview are primarily validated by this interview (Anne, 2022).

Five respondents from diverse backgrounds and professional experiences will be questioned about their understanding of integrated management systems (IMS) in this study. Face-to-face, phone, and online meetings are all part of the interview process. The information about the letter, including name, degree of education, field, place of employment, and work history are recorded.

The information from the interview will be analysed for content. When the data are available in themes and words, qualitative content analysis can be used to glean some insight into the findings (Schreier et al., 2020). Additionally, it denotes effective and impartial resources for linking and counting singularities as a research technique (Ann et al., 2020).

4.0 RESULTS AND DISCUSSION

4.1 Phase One – Quantitative Study

The result from the questionnaire is analyzed using the SPSS software to understand the data received. Respondents rated the intention of IMS implementation on a Likert scale. Table 6 shows the item statistics on the intention of IMS implementation. The mean, standard deviation, Relative Important Index (RII), and ranking of the most popular definition of IMS implementation are validated.

Table 6 Item Statistics on the intention of IMS implementation

The intention of IMS Implementation	Mean	Std. Deviation	RII	Ranking
To Fulfill the Customer Requirement (A1)	4.89	0.31	0.979	1
To Reduce Cost (A2)	4.12	1.045	0.824	5
To Improve Product and Service Quality (A3)	4.85	0.361	0.970	2
To Increase Efficiency (A4)	4.85	0.361	0.970	3
To Reduced Company Risk (A5)	4.82	0.461	0.964	4

Communalities values are the proportion of each variable’s variance that the factors can explain. Table 7 shows the commonalities of items on the intention of IMS implementation. Variables with high extraction values represent the variables in the common factor space. For example, from the table, reduced company risk has the higher extraction value, which is 0.825, and the most negligible extraction value is reduced cost, which is only 0.354. Extraction values below 0.4 show that the variables do not contribute much to the underlying factors.

The total variance can decide how many factors or variables are comprehended to retain. For example, table 8 shows the total variance explained on the intention of IMS implementation, where it has the initial eigenvalues and extraction sums of squared loadings. The initial eigenvalues show that component 1, or fulfilling the customer requirement, has more than one total value. That means the variables represent a real underlying factor. Therefore, only component 1 can have the extraction sums of squared loadings.

Table 7 Communalities of Items on Intention of IMS implementation

The intention of IMS implementation	Initial	Extraction
A1	1.000	0.580
A2	1.000	0.354
A3	1.000	0.759
A4	1.000	0.819
A5	1.000	0.825

Table 8 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.338	66.763	66.763	3.338	66.763	66.763
2	0.802	16.043	82.806			
3	0.429	8.577	91.383			
4	0.231	4.627	96.010			
5	0.199	3.990	100.000			

Rotated Component Matrix. Only one component was extracted. The solution cannot be rotated.

Table 9 shows the Correlation Matrix on the Intention of IMS implementations. The determinant value is relevant to the volume of the space engaged by the significant data points displayed by the raw scores on the measures involved. The common determinant value must be below one. In this study, the determinant value used is 0.53. The overall result from this Pearson's Product Moment Correlation Analysis is a positive value and close to one. The result shows a statistically significant relationship between all of the constructs. The strongest association is between increasing efficiency and improving product and service quality, with the results closest to one, 0.764.

Table 9 Correlation Matrix of the constructs on the intention of IMS implementations.

	A1	A2	A3	A4	A5
A1	1.000	0.230	0.541	0.678	0.616
A2	0.230	1.000	0.416	0.416	0.525
A3	0.541	0.416	1.000	0.764	0.756
A4	0.678	0.416	0.764	1.000	0.756
A5	0.616	0.525	0.756	0.756	1.000

Determinant = 0.53

4.2 Phase Two – Quantitative Study

Respondents rated the effectiveness of IMS implementation on a Likert scale, the mean, standard deviation, RII, and ranking of the most chosen variables on the effectiveness of IMS implementation are validated and shown in Table 10.

Table 10 Item Statistics on the effectiveness of IMS implementation

Effectiveness of IMS Implementation	Mean	Std. Deviation	RII	Ranking
Cost Reduction (B1)	3.59	0.976	0.718	7
Increase Productivity (B2)	4.80	0.437	0.961	5
Standardization (B3)	4.86	0.346	0.973	3
Continuous Improvement (B4)	4.88	0.329	0.976	1
Beneficial for Employee (B5)	4.35	0.754	0.870	6
Customer Focus and Satisfaction (B6)	4.88	0.329	0.976	2
Good and Better Image of Company (B7)	4.86	0.346	0.973	4

Table 11 shows the commonalities of items on the effectiveness of IMS implementation. For example, from the table of standardization and a good and better company image, the

higher extraction value is 0.955. Meanwhile, the most negligible extraction value is to increase productivity which is only 0.666. Extraction values are the percentage of variance in the variables explained by the retained factor. Since all the extraction values are more than 0.4, the variables represent many underlying factors.

Table 11 Communalities of Items on Effectiveness of IMS implementation

Effectiveness of IMS Implementation	Initial	Extraction
B1	1.000	0.786
B2	1.000	0.666
B3	1.000	0.955
B4	1.000	0.768
B5	1.000	0.754
B6	1.000	0.931
B7	1.000	0.955

Extraction Method: Principal Component Analysis.

Table 12 shows the total variance explained in the effectiveness of IMS implementation. The initial eigenvalues show that components 1 and 2 have more than one absolute value. It shows that they represent a real underlying factor. Therefore, only two elements can have the extraction sums of squared loadings. The Eigenvalues after Varimax rotation showed that component 1 has 60.829 % of the variance and component 2 has 22.246%. These two components explain the 83.074% factor structure of the total conflict among the items.

Table 12 Total Variance Explained on Effectiveness of IMS implementation

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.370	62.424	62.424	4.370	62.424	62.424	4.258	60.829	60.829
2	1.446	20.650	83.074	1.446	20.650	83.074	1.577	22.246	83.074
3	0.487	6.957	90.032						
4	0.410	5.851	95.883						
5	0.224	3.194	99.077						
6	0.065	0.923	100.000						
7	-2.994E-16	-4.277E-15	100.000						

Extraction Method: Principal Component Analysis.

Table 13 shows the rotated component matrix on the effectiveness of IMS implementation. The Varimax Rotational Matrix shows the correlation of each of the components with

eigenvalues greater than 1. This value is vital to determine the strength of the relationship between each variable. These components have been involved with the rotated component matrix. The two parts share the same high correlations with six variables: standardization and a good and better company image. The second component with high correlations with two variables costs reduction and benefits for the employee.

Table 13 Rotated Component Matrix on Effectiveness of IMS implementation

Variables	Component	
	1	2
B1		0.877
B2	0.812	
B3	0.965	
B4	0.872	
B5	0.389	0.776
B6	0.959	
B7	0.965	

Extraction Method: Principal Component Analysis.
2 components extracted.

Table 14 shows the Correlation Matrix on the effectiveness of IMS implementation. The overall result from this Pearson's Product Moment Correlation Analysis shows that this matrix is not definite. In this study, the determinant value used is 0.00. This result is not positive or substantial since there is a negative value between the constructs.

The strongest statistically significant relationship is between Standardization and a Good and Better Image of the Company, with a result of 1.000. Meanwhile, the negative statistically substantial values are for all factors.

Table 14 Correlation Matrix of the constructs on Effectiveness of IMS implementation

	B1	B2	B3	B4	B5	B6	B7
B1	1.000	0.133	0.014	0.083	0.510	0.035	0.014
B2	0.133	1.000	0.735	0.580	0.237	0.614	0.735
B3	0.014	0.735	1.000	0.799	0.244	0.935	1.000
B4	0.083	0.580	0.799	1.000	0.200	0.858	0.799
B5	0.510	0.237	0.244	0.200	1.000	0.297	0.244
B6	0.035	0.614	0.935	0.858	0.297	1.000	0.935
B7	0.014	0.735	1.000	0.799	0.244	0.935	1.000

a. Determinant = 0.000

b. This matrix is not positive definite.

The framework model in Figure 2, shows the steps the construction company should take before they start with the IMS implementation until they have been certified with the IMS. This framework is a complete set of actions or guidelines for the company to implement, starting from the idea of IMS certifications (Harrison, 2021). In the current construction industries, this framework development will assist the company in having clear ideas of what they need to do before implementing the IMS. This framework will make the job for the companies easier because they need to follow the exact steps to have a successful IMS implementation and be certified by the organization's body.

The first step in this framework is the analysis. The companies need to analyze the intention for them to implement the IMS and the effectiveness to the company after the IMS has been implemented (Marhavilas et al., 2022). This step is the study done in research objectives one and two. The company need to understand the need for them to have the IMS, which will assist the company in achieving their target, which is the effectiveness of the IMS implementation.

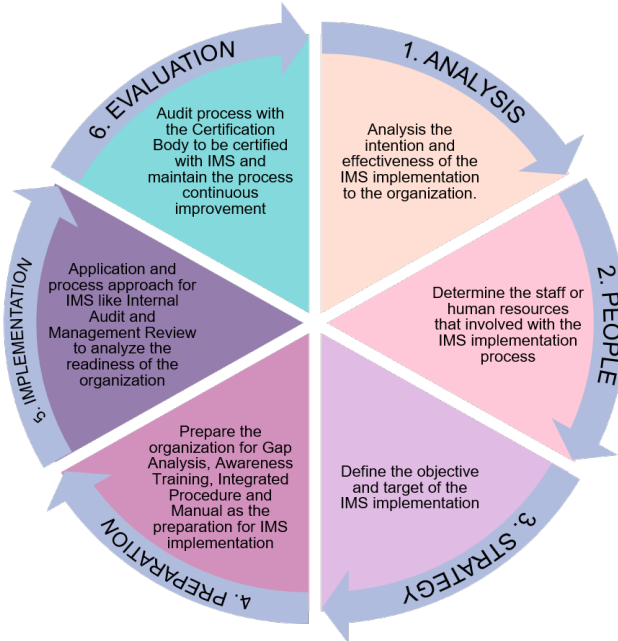


Figure 2 The framework of IMS implementation and adoption in the construction organization

The second steps from the framework model are the people. The management team must determine the staff or the human resources involved with the IMS implementation process, such as the consultation company and the certification body (Karanikas and Steele, 2020). Firstly, the management needs to identify the management representative that will be the supervisory job scope to monitor the junior level staff and communicate with the management level staff. They will play crucial roles in observing and guiding the company through implementation.

The company must also engage a consultant company familiar with the certification process. The consultant will help the company to train the staff on their job scope and the awareness of the IMS implementation. They also will advise the top management on the right things to do for the implementation process and be successfully certified by the certification body (Ispas and Mironeasa, 2022).

In this step, the management plays a crucial role in confirming the workforce directly involved in the implementation process. The administration needs to organize the staff number carefully to ensure all company staff acknowledge and know the process. Make sure all departments have the key person to receive the critical information from the management representative and consultant. Other than that, they also need to pass the information to their department staff precisely to avoid misunderstanding occur (Moczulska and Rogala, 2020).

The third step is a strategy where the organization needs to define the IMS implementation's objective and target (Masuin

and Latief, 2019). The main goals of the implementation are to fulfil the external and internal factors of the company. The external factor is like the customer requirement, and the inner element is continuous improvement. The management needs to set a target for the certification and the MS they plan to implement. The administration must choose the MS they need to implement wisely based on the company's requirements.

The next step is preparation, where the organization prepares for the gap analysis, awareness training, integrated procedure, and manual practice. After the management has finalized the MS to implement in the IMS, the company must prepare for the gap analysis. The gap analysis is essential for the company to know the performance and what things are missing and need improvement (Louise et al., 2022). Other than that, the consultant typically will provide a series of training that need to be joined by the staff as an awareness for the team to have some knowledge of the IMS process. From here, the manual and procedure will be prepared based on all the processes.

After all the manual and procedure preparation is done, the next step is the implementation process. First, the company must adopt all the manuals into their work process and have systematic documented information (John and Keith, 2023). Then, the company undergoes an internal procedure, such as an internal audit process and a management review. The internal audit is where the staff does the audit process to audit their colleagues from different departments. Staff will understand the auditing process and how to prepare for the external audit process. From the internal audit findings, the result will be presented to the top management in the management review process. Then, the administration will decide on the necessary action to improve the implementation process before proceeding with the auditing process with the certification body.

The final step is an evaluation where the external audit process will be done with the certification body to be certified with IMS and maintain the process for continuous improvement. After the management is satisfied with the internal audit process, the company will undergo an external audit. There are several types of the audit process with the certification body. First, the company will experience the Stage one audit process for the first-timer. The certification body does this audit process to see whether the company is ready for the MS they want to add (Ding et al., 2021).

After the result is satisfied with no non-conforming result, the certification body will recommend that the company undergo the Stage Two audit, which is the overall audit for the IMS. If the result is good from this audit, they will certify the company with the IMS certificates (Ding et al., 2021). The certificates will be valid for three years. After that, the company must follow up with the certification body to maintain the credentials by undergoing a yearly surveillance audit. During the surveillance audit, the certification body will decide whether the certification is still valid or not. Then, after three years, the company must undergo the recertification audit process to get a new certificate that will be valid for another three years. The cycle will be repeated as long as the company want to proceed with the certification.

Using this framework model will help the organization in general in the IMS implementation process and solve all the related issues. This framework is beneficial for everyone in the company. The first benefit is for the organization. The systematic guidelines on what action should be taken by the company will help the company have a better and proper system for the

implementation process (Harrison, 2021). The move is complete starting from the earlier steps like the analysis for the company to realize the intention and the effectiveness of the IMS implementation until the certification is successful and the continuous improvement.

The next benefit of the framework is for the shareholders and the top management. With the framework's proper guidelines, the implementation process's cost will be less (Ding et al., 2021). The price is more effective since the management fully understands the right things they need to do and what should be done. From here, the administration also understood the main intention for them to implement the IMS and not just apply for the implementation. Thus, they will acknowledge the process that is not necessary and cut the cost of the action.

Lastly, not only beneficial for the organization and the management, but the staff also received a benefit from the framework model (Ding et al., 2021). The work productivity will increase since the management team will organize and segregate the task appropriately required after the management understands the steps and actions that should be taken. Other than that, the staff will also be more effective since they will provide training that helps them improve their working skills. In addition, the training provided assists the team in understanding their job scope and ensuring they will only do necessary tasks.

5.0 CONCLUSIONS

IMS is a new process approach for the MS implementation where it is the simplified version of a single MS approach for the companies. Therefore, it is the primary action for the companies to be taken to make sure they fully understand the intention of why they need to implement the IMS. Once the companies understand the main reason for them to adopt the IMS, they will understand the effectiveness of the IMS after they implement it.

MSS are rules or procedures that the company willingly applies. This MSS consist of different part or factor that the company want to have guidelines to help them. This guideline will help the company to improve its management process. The company will choose the MS differently depending on the needs and business culture. Different companies may need to have more than one management system. The implementation process of a single MSS requires much work due to the lengthy process. The certification body came up with the IMS process from this long process, which combined all the MSS and simplified the process.

This research seeks to verify whether the company understand the need to implement IMS. This understanding is essential to help the company to realize the main ideas for them to have the IMS and make it easier for them to arrange their resources based on their needs. Furthermore, this model will help them to have a proper work process for the implementation. From the theoretical framework study, there are five reasons for the company to adopt the IMS. The respondent has chosen these five factors to see the most ideas for them to have the IMS. Therefore, this survey helps the company understand why they need IMS other than only to fulfil the customer requirement.

In the survey for the effectiveness of the IMS implementation, most companies needed to realize the different benefits they will receive from the IMS and the single

MSS implementation. Through this study, once they understand their intention to have the IMS, they will realize the benefit they will receive and how to fully utilize the effectiveness of IMS implementation. For example, the company mostly chooses continuous improvement's main advantage, and the lease benefit is cost reduction. Meanwhile, along the way of the implementation process, they will realize that the cost is higher in the first year of the implementation only and will be less for the following year.

The outcomes show that the company's familiarity related to the IMS information still needs to be improved. The company is also required to analyze the intention and effectiveness of the IMS implementation. They need to become more familiar with adopting and maintaining the IMS. Therefore, this is the main contribution of this study, where a framework has been created to assist the company in clearly understanding the IMS implementation. The framework will guide the company, starting with implementing the IMS and maintaining the IMS after they are certified with the IMS. This framework also shows the guidelines for keeping the process for continuous improvement.

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