



(RESEARCH ARTICLE)



Identification of benefits from Integrated Management Systems (IMS) to achieve Sustainability: A Systematic Literature Review

Kazi Humayra Shams*, Subrata Talapatra, Fardeen Islam and Ahsanul Abedin

Department of Industrial Engineering and Management, Khulna University of Engineering and Technology, Khulna, Bangladesh.

World Journal of Advanced Research and Reviews, 2023, 20(02), 514–529

Publication history: Received on 21 September 2023; revised on 04 November 2023; accepted on 06 November 2023

Article DOI: <https://doi.org/10.30574/wjarr.2023.20.2.2243>

Abstract

In the pursuit of sustainable development within Bangladesh's Readymade Garment (RMG) sector, this study undertakes an analysis of the substantial advantages of deploying an Integrated Management System (IMS). Focusing on ISO 9001:2015, ISO 14001:2015, OSHAS 18001:2007, and SA 8000:2014, the research illuminates the pivotal role of IMS in the context of this vital industry. The research methodology involved searching Google Scholar, Emerald, and Elsevier databases for IMS benefits from 2005 to 2022. Key IMS advantages were assessed through a questionnaire distributed to 248 representatives from 16 Bangladeshi RMG industry companies, resulting in 197 usable responses. The findings of this study reveal five major benefits of IMS in Bangladesh's RMG sector: improved resource utilization, reduced error and risk percentages, enhanced business sustainability, improved teamwork, and a reduction in duplications. This research offers both theoretical and practical implications. The study contributes to the literature by systematically reviewing IMS advantages and encourages managers to consider IMS for their organizations. Additionally, it provides valuable insights for decision-makers in formulating effective plans for IMS implementation, particularly in resource-constrained environments. Notably, this study holds significance due to its relatively unique focus on the major benefits of IMS implementation and can serve as a valuable guideline for IMS implementation in the RMG sector of developing countries.

Keywords: IMS benefits; Sustainability; ISO standards; Integration

1. Introduction

As a result of globalization and the economic instability, the marketing landscape has become more hypercompetitive and unpredictable. It is becoming challenging for businesses to flourish in current economy without meeting the needs of their consumers [1, 2]. As an example, consumers expect receiving reasonably priced, high-quality goods and services. Thus, the use of lean tools is crucial for fostering value creation and start-up businesses [3]. Companies are expected to use ethics to make decisions that benefit society, the environment, and their employees [4]. There are only a few examples of international managerial standards which are often utilized to meet the needs of a wide range of stakeholders. ISO 9001, ISO 14001, OHSAS 18001, and SA 8000 are some of the most widely adopted standards among the many available. It takes a lot of work to maintain just one management standard. When many management methods are used simultaneously or consecutively, the number of tasks grows drastically that requires to complete. Typically, multiple standards which are related to each other are dealt in an integrated manner to avoid a sudden increase in activity. Therefore, this is conceivable, towards some degree, to unify similar points giving rise to an IMS, combining particular points of other standards, since there is a common objective in the various ISO standards as well as others described before. There exist numerous definitions of IMS in the review of literature, but the most common one is "combining many management approaches into a single framework" [5]. Therefore, it becomes challenging to adopt and regulate several management standards that may be running concurrently, successively, or in an integrated form

* Corresponding author: Kazi Humayra Shams

[6]. As the difficulty of implementing and managing increases, so does the expenditure of implementation and the burden of bureaucracy.

Planning, operations, performance measurement, and quality enhancement method (i.e. the PDCA or plan do check act cycle) are the areas where management standards share structural similarities [7]. It has been suggested that combining several management strategies is the best way to effectively meet the requirements of a wide range of constituents [8]. Many authors suggested IMS may allow for the decrease in the number of activities by removing unnecessarily repeated steps and processes by integrating multiple management standards on the basis of their commonalities in structures. The inefficiency of management rises in direct proportion to the quantity of wasted, redundant efforts. Again, cutting down on duplicate efforts by eliminating unnecessary redundancies is a win-win [9]. Given the advantages, many factories throughout the world are considering using IMS. While other international management standards may give certain advantages related to a particular function, IMS goes beyond that to provide additional Comprehensive Benefits (CBs) [10]. This means that investigating the benefits offered by IMS implementation should be a priority for future researchers.

A large number of nations have not yet begun to fully deploy IMS ([11]. One of these countries is Bangladesh for a number of reasons, the most significant ones are Bangladeshi industrialists know little about the advantages of IMS and know even less about how to put IMS into practice. Industries in Bangladesh may be encouraged to use IMS if the public learns of its benefits. Exports from the readymade garments (RMG) industry are crucial to Bangladesh's economy, making nearly 76% of overall exports [12] (BGMEA, 2018) and making the country the world's second-largest RMG provider [13, 14]. The RMG industry is adopting a variety of managerial standards to accommodate the needs of its stakeholders and maintain its standing in the market. With the help of IMS, Bangladesh can attract more customers, solidifying its status as the world's RMG outsourcing powerhouse [15].

In this research, we look into and reveal a few more advantages that may result from using IMS. In either their separate or integrated forms, Multiple Management Standards (MMSs) can provide many advantages which are specifically functional. In addition, there are potential gains from integration of MMS operations [16, 17]. From the most up-to-date research, majority of studies concentrate on the advantages of various management systems individually [18, 19]. A wide variety of CBs have been documented, and the lists might scatter and differ from research to research. It's a fascinating topic, with practical and theoretical implications for both academics and business leaders. Comprehensive benefits of IMS may rise with a greater potential of integration [15, 20]. Hence, this research attempts to analyze all possible advantages received from IMS deployment by creating list of IMS implementation Comprehensive Benefits (CBs) more widely. A number of studies [21] highlight the positive outcomes that result from combining Quality Management System (QMS), Environmental Management System (EMS), and Occupational Health and Safety Management System (OHSMS). There are few researches which include that incorporating a Corporate Social Responsibility Management System (CSRMS) into an Integrated Management System has been shown to provide a number of advantages. Many authors show the connections between CSR perception, service quality, customer happiness, and knowledge of consumer rights [22]. Though Integration of management system (IMS) merges management approach functions into single multipurpose productive approach with powerful advantages, there are lack of awareness among the industry professionals regarding the benefits of IMS. This research finds the motivation of identifying and also analyzing the significance of the advantage through systematic literature review.

The following section of this research contains the literature review, and the third section is research methodology, fourth and fifth sections include data analysis along with discussion and conclusion respectively.

2. Literature Review

Integration is the creation of a single, overarching “core” management standard, with supplementary, flexible standards available for particular needs. Incorporating environmental, quality and occupational health and safety management systems involves linking them in specific form. In most cases, integration results in a management system that is robust and all-encompassing [23]. Integrating management systems that have comparable methods of execution may boost productivity [24]. The first stage toward integration is a deeper familiarity with and utilization of existing systems. Effective integration requires that various management systems be in sync with the organization's overarching goals and strategy. Whenever a company decides to integrate its management systems, they improve their external outlook and their relationships with stakeholders, and they also gain efficiencies connected to the more efficient administration of various management structures [25].

To achieve "sustainability in business," a dynamic equilibrium is required between the three key components (economic, environmental, and social) [26]. The dynamic equilibrium can only be maintained by the coordinated

management of these three aspects of sustainability. With the aid of IMS, all three aspects of sustainability may be managed simultaneously. That's why IMS is important to a company's long-term viability; it helps the bottom line and the community.

2.1. Advantages of an Individual Management Method

An organization's success depends on its management approach, which consists of a collection of policies and practices designed to bring about the desired results [27]. Quality Management System (QMS), Environmental Management System (EMS), Occupational Health and Safety Management System (OHSMS), and Corporate Social Responsibility Management System (CRMS) are the four most popular types of management systems. ISO 9001 is the most well recognized QMS standard internationally. The first version appeared in 1987, and the most recent edition came out in 2015. Implementing ISO 9001 has been shown to have several advantages in the published literature. The advantages have been studied from a variety of angles by academics. The majority of studies have divided the advantages into two groups: internal and external, although some have also broken them down into operational and financial advantages. Several instances of internal advantages that have been cited in the literature include increased productivity, improved product quality, and a more motivated workforce [28, 29]. Contrarily, external advantages might include factors like increased satisfaction among customers and a better reputation for the company [30]. Improvements in areas such as communication, teamwork, staff satisfaction, paperwork, etc., have a positive impact on business operations [31]. Financial advantages are the same and include things like improved sales, profits, market share, etc. [14].

In terms of international standards, ISO 14001 is the second-most popular one. Its primary function is to aid in the administration of environmental consequences, and it was initially implemented in 1996. In 2015, ISO released version 2015 of ISO 14001. Benefits such as these are included in the standard since they fall under the same category as ISO 9001's inner advantages [6, 32] and the category of external benefits shown in Table 1, which includes things like improving the company's image, meeting stakeholder expectations, and strengthening [25, 33]. Employee morale, greater collaboration, enhanced operational control, improved documentation, etc. are all benefits associated to operational performance [34]. Additionally, significant monetary advantages include market stake, increased selling, higher profit margin, etc.

Publication of OHSAS 18001 in 1999 established it as the third most commonly used international standard for OHSM. This standard was updated in 2007. As with other management standards, OHSAS 18001 provides advantages for the organization as a whole as well as for the workplace. Internal advantages include things like finding dangers, getting a handle on risks, increasing production rate, etc. [35]. Common external advantages include customer loyalty, a better reputation, stronger relationships with key stakeholders, etc. [36]. Improved operational performance may be achieved via several means, including enhanced communication and control, improved planning, the advancement of organizational objectives, and enhanced operational processes [6, 29]. Profitability, increased sales, increased market share, etc., are all examples of monetary advantages. ISO 45001 was only released recently.

The SA 8000 standard, initially established in 1997, is the most extensively used international standard of CSRMS. The SA 8000: 2014 is the most recent revision of this standard. There are several internal and external advantages to using this standard. Internal advantages sometimes include things like lowering the likelihood of a worker being injured on the job, protecting workers' rights, creating an atmosphere of mutual trust between employees and management, providing a safe and healthy workplace, and so on [37]. Enhanced credibility in the job market, stronger relations with labor unions, etc. are all instances of external advantages that are prevalent. Fewer absenteeism, a more dedicated staff, a reduced turnover rate, etc., are all advantages that flow from high operational performance [38]. Lessened overtime pay, manufacturing costs, administrative expenses, etc., are all tangible results that improve financial outcomes [39].

Table 2 illustrates the supporting research papers which are selected for identifying the Core Benefits (CBs) of IMS implementation.

Table 1 Main benefits of different international standards

No. of Benefits	Supporting Literature			
	ISO 9001	ISO 14001	OHSAS 18001	SA 8000
1. Internal				
(i) Production rate increase	[2]	[6]	[6]	[6]
(ii) Operative functions development	[24]	[29]	[29]	[29]
(iii) Better Quality Control	[3]	[40]		[3, 41]
(iv) Employee incentive	[42]	[4]	[29]	
(v) Worker contentment	[43]	[44]	[45]	[8]
(vi) Improved Teamwork	[46]	[47]		[48]
(vii) Employee involvement in work	[29]			[41]
(viii) Better decision-making		[5]		
(ix) Increased product/service reliability	[49]	[29]		[50]
(ix) Better training facility	[51]	[8, 44]		[9, 52]
2. External	[5]	[48]		
(i) Better organizational image	[29]	[54]		
(ii) Better customer satisfaction	[53]			
(iii) Better relationship with stakeholders		[9]		
3. Operational				
(i) Better documenting				
(ii) Clarification of roles and responsibilities		[55]		
(iii) Proper interaction				
(iv) Managerial control				
(v) Increasing functional improvement				
(vi) Good plan to achieve goals				
(vii) Adaption with new standards				
(viii) Reducing chances of risk				
4. Financial				
(i) Profit Margin				
(ii) Sales growth				
(iii) Lessened manufacturing cost				
(v) Less cost overhead				

Table 2 Research paper which are selected to identify CBs of IMS

No	Title	Author(s)/year	Journal	Times cited
1	Integrated management systems maturity: Drivers and benefits in Indian SMEs	[56]	Journal of Cleaner Production 293	12
2	Critical analysis of information about integrated management systems and environmental policy on the Portuguese firms' website, towards sustainable development	[57]	Corporate Responsibility and Environmental Management	41
3	Sustainability criteria and sustainability compliance index for decision support in product development	[16]	Journal of Cleaner Production	172
4	Main benefits of Integrated Management Systems Through Literature Review	[25]	International Journal of Quality	79
5	Sustainability management emergence and integration on different management levels in smaller large-sized companies in Austria	[58]	Corporate Responsibility and Environmental Management	40
6	The main benefits of the implementation of the quality management system in higher education institutions in Angola	[22]	Quality Innovation Prosperity	27
7	Integrated management Systems- trends for Portugal in the horizon 2025	[20]	Procedia Manufacturing	64
8	Exploring the integration of corporate sustainability into strategic management: a literature review	[19]	Journal of Cleaner Production	634
9	Integrating corporate sustainability assessment, management accounting, control and reporting	[59]	Journal of Cleaner Production	370
10	Integration of management systems: towards a sustained success and development of organizations	[13]	Journal of Cleaner Production	180
11	Integration of standardized management systems: a dilemma?	[60]	Systems	63
12	Benefits of management systems integration: a literature review	[28]	Journal of Cleaner Production	275
13	Integrated management systems towards sustainable and socially responsible organization	[21]	Total Quality Management & Business Excellence	98
14	Integrating sustainability aspects into an integrated management system	[61]	The TQM Journal	51
15	Building the sustainable organization: an integrated approach	[50]	Journal of Business Strategy	49
16	Conception of a flexible integrator and lean model for integrated management systems	[62]	Total Quality Management & Business Excellence	105
17	Guidelines for the integration of certifiable management systems in industrial companies	[63]	Journal of Cleaner Production	203

18	A generic model for integration of Quality, Environment and Safety Management Systems	[64]	TQM Journal	157
19	ISO and OHSAS certifications: How stakeholders affect corporate decisions on sustainability	[65]	Management Decision	106
20	Difficulties and benefits of integrated management systems	[34]	Industrial Management & Data Systems,	173
21	Management systems: integration or addition?	[66]	International Journal of Quality	162
22	An empirical examination of benefits from implementing integrated management systems (IMS)	[67]	Total Quality Management	174
23	Integral responsibilities for a responsive and sustainable practice in organization and management	[68]	Corporate Social Responsibility and Environmental Management	74
24	Certification and integration of management systems: the experience of Portuguese small and medium enterprises	[69]	Journal of Cleaner Production	316
25	Integrated Management Systems as a Corporate Response to Sustainable Development	[70]	Corporate Social Responsibility and Environmental Management	152
Note: Times cited in Google Scholar				

2.2. Advantages of Integration of Management Systems (IMS)

The inefficiency, bureaucracy, high cost of implementation, and duplication of effort that follow from using many management standards separately. For this basis, sociologists have argued in favor of combining different types of management techniques. Synergies between various management standards are the source of IMS implementation effectiveness [71]. It has been discovered via research that IMS provide several CBs that are not often seen in individual management techniques. In order to get the best possible outcomes of every component and function in an IMS, CBs must be obtained. Although there are certain CBs that are universal across integration types, their coverage is limited due to the bigger opportunities of integrating. In other terms, CBs originate from the aggregation of previously separated management processes. Existing techniques, according to the IMS literature, don't guarantee full integration of various managerial standards in all areas. Firstly, management standards aren't helpful in adapting to organizational culture alterations, and secondly, as more management standards are added to an IMS, the system gets more complicated [72, 73]. Countries all throughout the world, like Denmark, England, Spain, and Australia, have each created their own unique IMS national standard to meet their own needs [28]. However, those national criteria are not universal and might requisite some tweaking. ISO has begun prioritizing criteria for integration that emphasize the core alignment characteristics of the various worldwide management standards. ISO has lately designed a high level structure (HLS) named "Annex SL" to facilitate this integration (ISO, 2018). A company may be able to reap the advantages of integration more quickly with the aid of this HLS [67]. Two management systems make up IMS, and Bernardo, Simon [28] examined the internet databases Web of Science, Emerald, and Science Direct to find 18 empirical research on the advantages of IMS (ISO 9001 and ISO 14001). Findings indicated that integrated management systems could provide advantages than independently maintained norms. Thus, many corporations throughout the world are adopting an integrated approach to ISO 9001 and ISO 14001 in order to meet the needs of all their stakeholders.

There is a growing need for improved risk management at the strategic and operational levels from parties including consumers, communities, and governments [74]. Consequently, many corporations throughout the world are adopting an integrated approach to the implementation of ISO 9001, ISO 14001, and OHSAS 18001. The risk-based approach is supported by the abovementioned management standards because of the way they are structured. Nevertheless, the topic of reducing risks in the workplace is controversial. Misleading auditing and intangible data are two of the biggest obstacles to effective occupational risk management, as [29] pointed out. Many companies throughout the globe are attempting to improve their social responsiveness as part of their efforts to promote sustainable development. In an

effort to streamline their operations, businesses are looking to integrate CSRMS with their current IMS procedures [75]. A massive study has been carried out to pinpoint the advantages of CSRMS in a separated manner. There is not yet a compiled list of IMS advantages established on the combination of QMS, EMS, OHSAS, and CSRMS. The following part explains the research methodologies that helped to compile this full list of IMS advantages, as well as a survey approach used to do an empirical research on these advantages.

3. Research Methodology

Research on the synergy of four management standards has been conducted via a thorough literature study (ISO 9001, ISO, 14001, OHSAS 18001, SA 8000). The authors interviewed prominent professionals in the field of IMS in Bangladesh's RMG industry to collect empirical data on the anticipated advantages of implementing the mentioned integrated management standards. The flow diagram of research methodological approach is shown in Figure 1 and the steps are in the Table 3.

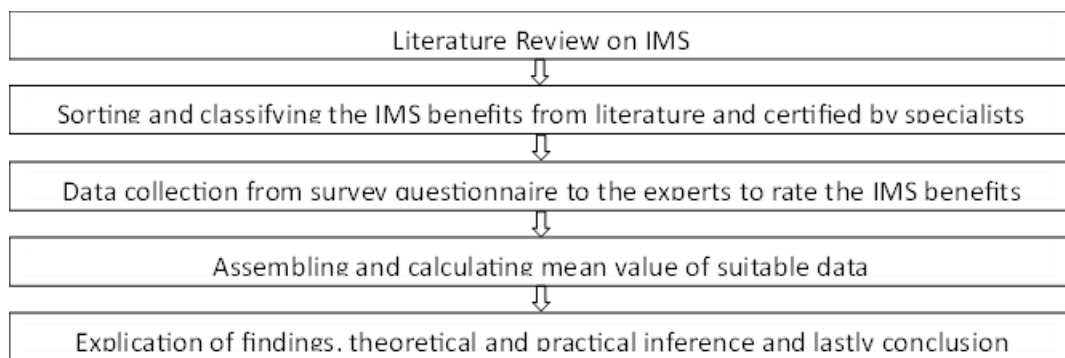


Figure 1 Flow diagram of our research methodology

3.1. Search from Electronic Database

In this work, we used the systematic review of literature approach outlined by Tranfield, Denyer [76]. As a result of contradictory findings, this strategy was used to better understand the advantages of IMS [2]. Finding research papers has been accomplished via the use of a keyword based strategy. The terms "integrated management systems," "integrating," "benefit," "management system integration," and "management system" were all utilized throughout the research. Both the title and the keyword sections of a search engine have been updated to include the terms that were discussed. Authors placed special emphasis on the Scopus and Web of Science databases to ensure they included the most current and relevant works in the area of IMS. Emerald, Science Direct, and Wiley were used to search for journals. There were 432 results obtained from the keyword search. Papers that met certain criteria were further narrowed down using filters, such as those that were written in English, were either research articles or reviews, and were published between 2005 and 2022. The number of results was narrowed down to 79 items after these criteria were applied. Document filtering of these papers has been conducted as a last screening to find valuable material from the first retrieved publications. Articles were screened for their content to see whether they mentioned the advantages of IMS. After a second round of screening, 25 items made the cut (Table 2).

3.2. Material assessment and creation of a substantial benefits list

A thorough reading of the papers was done after locating pertinent articles. The authors highlighted the key ideas, contributions, and concluding remarks after a preliminary study of the publications. The authors were able to detect and derive the stated IMS advantages by a comprehensive and in-depth examination of a few chosen papers. Each benefit was double checked within the chosen papers to minimize repetition. As a result, 41 IMS advantages were effectively extracted from the IMS literature, and they are depicted in Table 4. Here, "Best utilization of available assets," "Synergy of various management practices" and "Developed legislative conformance" all contribute to a better environment, cleaner production, and business sustainability at the same time. The frequency with which the advantages of IMS were cited in the chosen literature is shown in Figure 2.

3.3. Construction of the survey questionnaire

The majority of IMS research have used questionnaire surveys and been based on a detailed listing of IMS advantages. There are two components to the herein suggested questions. Important organizational information may be found in Section 1. The apparent benefits of IMS are covered in Section 2. A comprehensive review of the literature supports the

evaluation of validity of the questionnaire. Four industry professionals and three academics evaluated the survey. These professionals all have at least eight years of IMS-related expertise. The final questionnaire passed a pilot test and was deemed trustworthy. On a five-point scale, the respondents were asked to assess the observed advantages of IMS, which is made up of QMS, EMS, OHSMS, and CSRMS. On the scale, 1 denotes no benefit, 2 minor benefit, 3 moderate benefit, 4 large benefit, and 5 extremely important benefit.

Table 3 Steps of systematic approach for this research

Steps		
Step 1: Keyword Identification		
Step 2: Screening criteria	Initial Screening	Language: English Timeline: 2005-2022 Type: Peer review article Articles based on IMS execution process are excluded
	Final Screening	Articles focusing on benefits and the classification of those are included Integration standards related information are included Articles on barriers of IMS implementation in industries are excluded
Step 3: Search Engine	Science direct, Google Scholar	
Step 4: Search Results	Science direct	287
	Emerald	95
	Google Scholar	149
	Willy	51
Step 5: Number of articles selected after initial screening	79	
Step 6: Number of articles selected after final screening	25	

3.4. Selection of Sample

A study from the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) lists 15 RMG sectors that use IMS (BGMEA, 2018). In this analysis, every listed company was taken into account. The authors discovered throughout the fieldwork that OHSAS 18001:2007 and SA 8000:2014 were handled individually, whereas these organizations were using ISO 9001:2015 and ISO 14001:2015 in a unified manner.

3.5. Designing the Survey and Data Collection

The revised Dillman [77] approach for collecting information was used for data assembly. This approach was adopted to boost responsiveness [8]. 248 representatives of the 17 RMG industry received an email with the whole set of questions. This research received and took into consideration 197 full and useful replies, for a response rate of 72.11%. When compared to earlier research in the IMS sector, the response rate is extremely excellent [8]. Table 5 demonstrates the participants' demographic characteristics.

Table 4 List of IMS advantages extracted from the literature review

No.	Benefits	Number of papers include the benefits (out of 25)
1	Improve the credibility of the company among its stakeholders	11
2	Providing an Integrated Risk management strategy in business	6
3	Significantly raise the institution's ability to accomplish its goals.	7
4	More proactive approach of employee training	18
5	Improved decision-making	13
6	Enhance production rate efficiently	21
7	Ensuring core competencies through the synergy of various managerial practices	17
8	Develop legislative conformance	9
9	Improvement of internal and external collaboration in organization	4
10	Improved relationship among stakeholders	14
11	Redundancy of duplicated documents, data and records	17
12	Unifying internal audit report	15
13	Simplification of processes through integration	11
14	Reduction of time and effort wastage	8
15	Lessen resources and delay of completion	3
16	Best utilization of available assets	21
17	Compatible interrelationship	17
18	Reducing the expense of setup and management	12
19	Sustainability enhancement	23
20	Optimization of process	9
21	Effective engagement and interaction	11
22	Better organizational culture	19
23	Improve the coordination of strategies and goals at the strategic, tactical, and functional levels.	21
24	Optimized training programs through unification	5
25	Enhancement of employee motivation	17
26	Better teamwork	20
27	Sufficient qualified workforce	8
28	Decreasing conflict, redundancy and uncertainty among management standards	10
29	Enabling additional management standards	7
30	Clear definition of roles and responsibilities	16
31	Improving operational quality	9
32	Reduced percentage of errors and risk	20
33	Smoother procedure by increased visibility	15

34	Increase adaptability by changing traditional approach	12
35	Increased operational facilities	21
36	Better monitoring over process improvement	19
37	Competitive advantage	4
38	Integrated external audits	6
39	Effective use of audit result to improve control process	18
40	Improved resiliency and responsiveness	12
41	Improved use of innovation and creativity	11

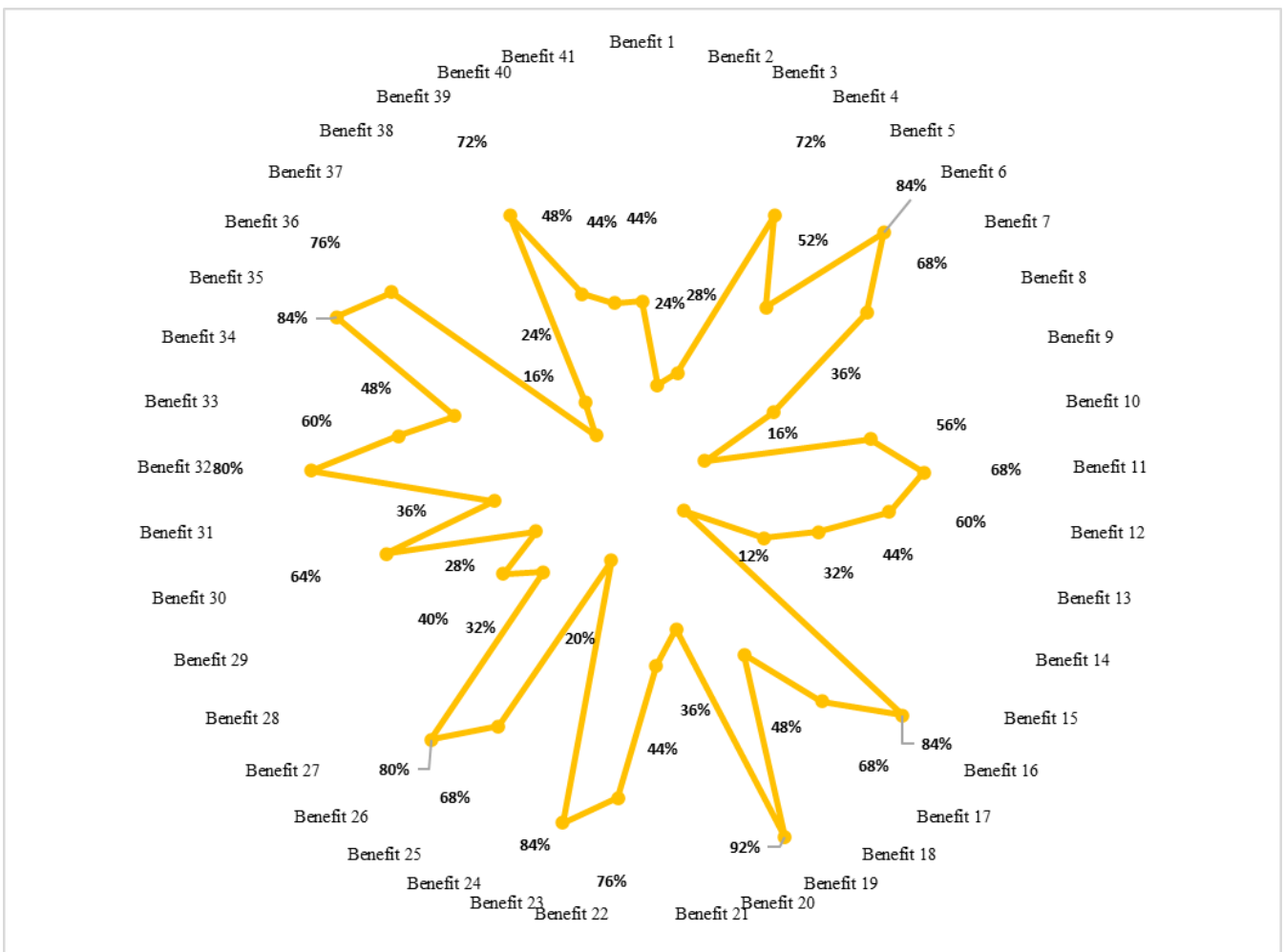


Figure 2 Frequency of IMS benefits

Table 5 Demographic profiles of the respondents

Category	Number of respondents	% of respondent
Managerial stages		
Top Management	15	9.09
Middle Management	47	28.49
Lower Management	103	62.43
Turnover		
US\$5-10M	39	16.46
US\$11-50M	45	18.99
Above US\$50M	153	65.56
Number of employees		
151-250	34	12.73
251-500	110	41.20
500+	123	46.07
Involvement with integrated management systems		
0-5 years	35	14.71
5 years and more	203	85.29

4. Results and discussion on findings

The survey questionnaire consisted of a total of 29 Integrated Management System advantages. Professionals and Academics in the RMG industry were asked to rate on a five-point scale about the efficacy of each benefit of the IMS. The software IBM SPSS version 20, descriptive statistics (mean, standard deviation, etc.) were used to assess survey data (mean, standard deviation, etc.). Four different managerial standards are applied to the firms chosen for data collecting (ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 and SA 8000:2014). These businesses possess a combined ISO 9001:2015 and ISO 14001:2015 internal audit system. Almost half (43.36%) of those surveyed reported using a unified system is necessary for managing documents and taking corrective and preventative measures. No responder has mentioned using a single handbook for integration of managerial standards. Figure 3 depicts the stated significance of the IMS execution advantages in Bangladeshi RMG industries.

As indicated in Figure 3, the most significant advantage whose mean value is 4.6703 points, is “Best utilization of available assets”. IMS gives improved rules for assigning resources to a certain job at the optimal moment. So, its implementation can guarantee optimization of assets at each level and functional activities [78] that leads to increased operational efficiency. The Second one “reduced percentage of errors and risk” with 4.6000 mean value, indicates that IMS provides a better approach to risk management system and it can reduce the disadvantages of using individual standards easily by identifying errors and necessary corrective measures. The third major benefit of IMS “Enhancement sustainability” with a mean value of 4.5801 is obtained from the basis that IMS provides assistance to develop a systematic framework for achieving sustainability management of different organizations. In order to survive in the present competitive climate, businesses must function in a socially, economically, and environmentally responsible manner. “Better teamwork” is the fourth most significant benefit with the valuation of 4.5733. IMS policy provides businesses with setting acceptable, quantifiable goals which leads to better communication and improved teamwork [22]. In actuality, these synergies result from the maximizing of the value of each integrated part and function. The redundancy of duplication in documents, data and records of RMG manufacturing industries has the possibility to decrease at noticeable manner if IMS is implemented properly in the supply chain management [79]. It is the fifth most important benefits obtained from the outcomes we have. Integrated system provides a management with effective audit result to quality control which brings much better operational facilities. It is the next major significant advantage provided by IMS implementation. Improved efficiency offered by IMS can also contribute to the organization’s profit.

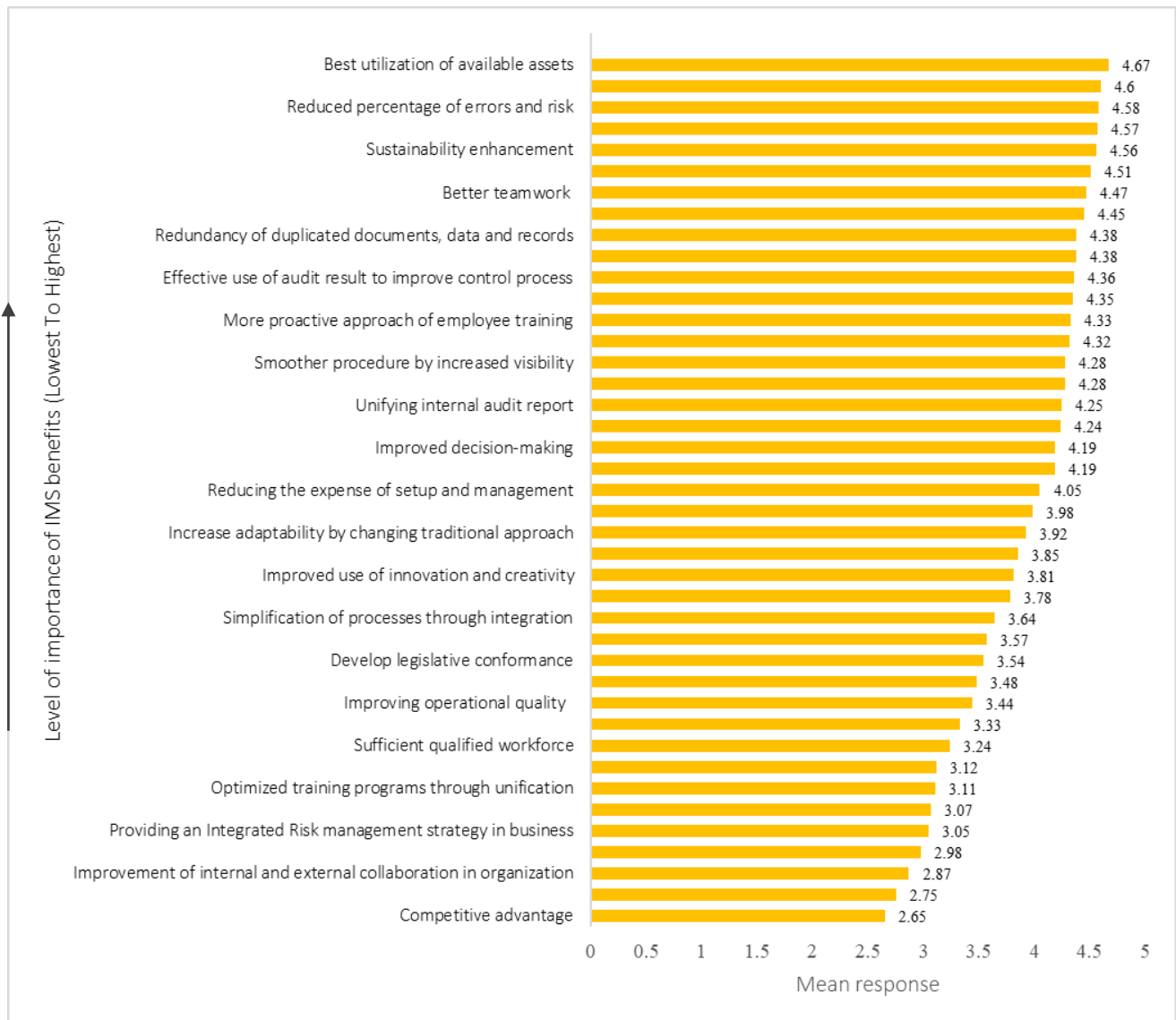


Figure 3 Outcomes of surveys regarding IMS benefits in Bangladeshi RMG industry

No prior research on IMS addressed CBs from a broad, cross-functional approach [11, 25]. As more systems are connected, more CBs will emerge. When it comes to ISO 9001 and ISO 14001, for instance, Khanna et al. (2010) found 16 advantages of IMS; nevertheless, the majority of these advantages were general function-specific. When discussing the combination of ISO 9001 and ISO 14001, Bernardo et al. (2015) uncovered over 35 IMS advantages, most of which were generic. The current research identifies 41 CBs of IMS, some of which have been detected in previous studies, but these are evaluated differently according to nations (i.e. cultural diversity and resource allocation concerning to various nations). The present research has provided a more comprehensive view on the advantages of IMS by broadening the perception on the incorporation of a greater quantity of standards, including ISO 9001, ISO 14001, OSHAS 18001, and SA 8000. In particular, the advantages of IMS in Bangladesh's RMG industry make a significant contribution to the country's long-term economic growth.

5. Conclusion

The widespread implementation of IMS has the potential to contribute to a solution for lowering global water use, which is particularly important in places where potable water is in short supply. Two of the key advantages of IMS listed in Table 4 are "Best utilization of available assets" and "Ensuring core competencies through the synergy of various managerial practices," both of which allow businesses to "do more with less" by conserving materials, so boosting "cleaner production," "sustainable growth in business," and "corporate social responsibility" (CSR). Improving conformance laws, which emphasizes following environmental regulations, is another advantage of IMS. With its holistic

approach on water consumption, IMS is crucial to maximizing productivity and conserving resources. Environmentally sustainable manufacturing, corporate social responsibility, and long-term viability are all boosted by water efficiency.

The RMG industry in Bangladesh is struggling to meet the demands of its many stakeholders. They are handling the need at the moment by using many management standards. It is not efficient to run many management systems independently. Consequently, many factories across the globe are using IMS. Although the Bangladeshi RMG industry is cognizant of IMS's advantages, widespread adoption has yet to occur. Another reason this industry requires IMS as a CSR-focused business strategy is to keep up with the competition. Several CBs of IMS have been identified by this research for application in this industry; among these, the most significant are enhanced capability to achieve organizational goals, optimized use of resources, sustainability of the business, synergies between various managerial initiatives, and decreased unnecessary repetition of work.

5.1. Theoretical Implications of the research

There are two main takeaways from the current research that add to the body of IMS literature. Firstly, it has been mentioned in a number of different papers that IMS provides a large selection of barriers of IMS Implementation. Nevertheless, there was less effort put on identifying IMS CBs. The current research is aimed to add to the existing information on the advantages of IMS by identifying them in the perspective of the RMG industry in Bangladesh. Second, IMS including all three of ISO 9001, ISO 14001, and OHSAS 18001 have been shown to be beneficial in the past [28]. Our research has shown the advantages of implementing an IMS where four international management standards (ISO 9001, ISO 14001, OHSAS 18001, and SA 8000) were implemented. The results of the present research add to the understanding of the methods through which IMS's possible advantages may be discovered.

5.2. Practical Implications of the research

The findings of this research have substantial implications, particularly in industrialized nations where environmental management systems (EMSs) have shifted their focus from pollution remediation to pollution prevention in an effort to advance environmental sustainability. Since they are seldom pro-active, pollution prevention initiatives in underdeveloped nations are frequently inefficient and ineffective. Prior to waste treatment, also known as pollution treatment, begins, pollutants may cause damage to the environment. There should be a strong focus on strengthening efforts to reduce pollution. In order to achieve long-term sustainability via pollution mitigation, it is crucial to determine where these pollutants are coming from. Most pollution comes from the release of harmful by-products during manufacturing. Unsafe by-products are often the result of careless manufacturing management. Overuse of resources like water and electricity often results from poor management.

Limitations and forthcoming research opportunities

The data we have gathered gives insight into a certain time and specific industry. More research is needed to anticipate the indicators' future directions. As a small number of businesses use IMS in Bangladesh, this research can only draw from a selective demographic. To ensure the reliability of these metrics, the research has to be replicated in other countries. Using objective measurements of performance, it will be crucial to investigate the advantages of IMSs with CSR requirements in future.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] Ahidar, I., D. Sarsri, and N.J.T.T.j. Sefiani, Approach to integrating management systems: Path to excellence application for the automotive sector using SYSML language. 2019.
- [2] Samani, M., et al., Development of a conceptual model for risk-based quality management system. 2019. **30**(5-6): p. 483-498.
- [3] Sfredo, L.S., et al., ISO 9001 based quality management systems and organisational performance: a systematic literature review. 2021. **32**(3-4): p. 389-409.

- [4] Maas, S., T. Schuster, and E.J.J.o.B.E. Hartmann, Stakeholder pressures, environmental practice adoption and economic performance in the German third-party logistics industry—a contingency perspective. 2018. **88**(2): p. 167-201.
- [5] Teixeira, A.A., et al., The importance of quality management for the effectiveness of environmental management: Evidence from companies located in Brazil. 2019. **30**(11-12): p. 1338-1349.
- [6] Ikram, M., et al., Do environmental management systems help improve corporate sustainable development? Evidence from manufacturing companies in Pakistan. 2019. **226**: p. 628-641.
- [7] Li, W., et al., Insights into the Composition and Antibacterial Activity of Amomum tsao-ko Essential Oils from Different Regions Based on GC-MS and GC-IMS. *Foods*, 2022. **11**(10).
- [8] Ağan, Y., et al., The relationships between corporate social responsibility, environmental supplier development, and firm performance. 2016. **112**: p. 1872-1881.
- [9] Merli, R., M. Preziosi, and I.J.S. Massa, Social values and sustainability: a survey on drivers, barriers and benefits of SA8000 certification in Italian firms. 2015. **7**(4): p. 4120-4130.
- [10] Cong, W.a.S., L. (2019), Heterogeneity of industrial development and evolution of cleaner production: bibliometric analysis based on JCLP. *J. journal of Cleaner Production*, 2019. **212**.
- [11] Nunhes, T.V., L.C.F.M. Barbosa, and O.J.J.o.c.p. de Oliveira, Identification and analysis of the elements and functions integrable in integrated management systems. 2017. **142**: p. 3225-3235.
- [12] BGMEA, BGMEA directory, 2016-2017. 2018.
- [13] Rebelo MF, Santos G, Silva R. Integration of management systems: towards a sustained success and development of organizations. *Journal of cleaner production*. 2016 Jul 20;127:96-111.
- [14] Syduzzaman, M., et al., Effects of implementing TQM principles in the apparel manufacturing industry: case study on a Bangladeshi clothing factory. 2016. **6**(3): p. 68-75.
- [15] Llonch, M., et al., A case study of a simultaneous integration in an SME: Implementation process and cost analysis. 2018.
- [16] Hallstedt, S.I.J.J.o.C.p., Sustainability criteria and sustainability compliance index for decision support in product development. 2017. **140**: p. 251-266.
- [17] Jones, C., D.A. Fike, and P. Peres, Investigation of the quasi-simultaneous arrival (QSA) effect on a CAMECA IMS 7f-GEO. *Rapid Commun Mass Spectrom*, 2017. **31**(7): p. 623-630.
- [18] Santos, G., et al., Motivation and benefits of implementation and certification according ISO 9001—the Portuguese experience. 2014. **6**(5): p. 1-12.
- [19] Engert, S., R. Rauter, and R.J.J.o.c.p. Baumgartner, Exploring the integration of corporate sustainability into strategic management: A literature review. 2016. **112**: p. 2833-2850.
- [20] Ribeiro, F., et al., Integrated Management Systems: trends for Portugal in the 2025 horizon. 2017. **13**: p. 1191-1198.
- [21] Mežinska, I., et al., Integrated management systems towards sustainable and socially responsible organisation. 2015. **26**(5-6): p. 469-481.
- [22] Africano N, Rodrigues AS, Santos G. The main benefits of the implementation of the quality management system in higher education institutions in Angola. *Quality Innovation Prosperity*. 2019 Nov 30;23(3):122-36.
- [23] Zhang, D., et al., An integrated system for nonpoint source pollution modelling and management. *Water Sci Technol*, 2006. **54**(11-12): p. 101-9.
- [24] Runciman, W.B., et al., An integrated framework for safety, quality and risk management: an information and incident management system based on a universal patient safety classification. *Qual Saf Health Care*, 2006. **15 Suppl 1**(Suppl 1): p. i82-90.
- [25] Talapatra, S., et al., Main benefits of integrated management systems through literature review. 2019. **85**.
- [26] Silvestri, A., et al., Global Performance Index for Integrated Management System: GPI-IMS. *Int J Environ Res Public Health*, 2021. **18**(13).
- [27] Nawaz, W. and M.J.J.o.C.P. Koç, Development of a systematic framework for sustainability management of organizations. 2018. **171**: p. 1255-1274.
- [28] Bernardo, M., et al., Benefits of management systems integration: a literature review. 2015. **94**: p. 260-267.

- [29] Nunhes, T.V. and O.J. Oliveira, Analysis of Integrated Management Systems research: identifying core themes and trends for future studies. *Total Quality Management & Business Excellence*, 2018. **31**(11-12): p. 1243-1265.
- [30] Chen, T., et al., Detection of Adulteration in Canola Oil by Using GC-IMS and Chemometric Analysis. *Int J Anal Chem*, 2018. **2018**: p. 3160265.
- [31] Jha, D., et al., Protocol for the mWellcare trial: a multicentre, cluster randomised, 12-month, controlled trial to compare the effectiveness of mWellcare, an mHealth system for an integrated management of patients with hypertension and diabetes, versus enhanced usual care in India. *BMJ Open*, 2017. **7**(8): p. e014851.
- [32] Yu, J. and S.J.S. Lee, The impact of greenhouse gas emissions on corporate social responsibility in Korea. 2017. **9**(7): p. 1135.
- [33] Abad, J., I. Dalmau, and J.J.J.o.c.p. Vilajosana, Taxonomic proposal for integration levels of management systems based on empirical evidence and derived corporate benefits. 2014. **78**: p. 164-173.
- [34] Simon, A., et al., Difficulties and benefits of integrated management systems. 2012. **112**(5): p. 828-846.
- [35] Simpson, K.N., et al., Observed Cost and Variations in Short Term Cost-Effectiveness of Therapy for Ischemic Stroke in Interventional Management of Stroke (IMS) III. *J Am Heart Assoc*, 2017. **6**(5).
- [36] Ubohov, S.H., et al., Process model of the pharmaceutical integrated management system. *Wiad Lek*, 2019. **72**(2): p. 201-208.
- [37] Zhou, S., et al., Characteristic Volatile Organic Compound Analysis of Different Cistanches Based on HS-GC-IMS. *Molecules*, 2022. **27**(20).
- [38] Gaye, M.M., R. Kurulugama, and D.E. Clemmer, Investigating carbohydrate isomers by IMS-CID-IMS-MS: precursor and fragment ion cross-sections. *Analyst*, 2015. **140**(20): p. 6922-32.
- [39] Drees, C., et al., GC-IMS headspace analyses allow early recognition of bacterial growth and rapid pathogen differentiation in standard blood cultures. *Appl Microbiol Biotechnol*, 2019. **103**(21-22): p. 9091-9101.
- [40] Kawai, N., R. Strange, and A.J.I.B.R. Zucchella, Stakeholder pressures, EMS implementation, and green innovation in MNC overseas subsidiaries. 2018. **27**(5): p. 933-946.
- [41] Parsons, K., ISO standards on physical environments for worker performance and productivity. *Ind Health*, 2018. **56**(2): p. 93-95.
- [42] Kharub, M., R.J.T.Q.M. Sharma, and B. Excellence, An integrated structural model of QMPs, QMS and firm's performance for competitive positioning in MSMEs. 2020. **31**(3-4): p. 312-341.
- [43] Almeida, D., et al., Assessment of ISO 9001: 2015 implementation factors based on AHP: Case study in Brazilian automotive sector. 2018.
- [44] Lee, S.M., et al., Environmental policy performances for sustainable development: from the perspective of ISO 14001 certification. 2017. **24**(2): p. 108-120.
- [45] Rebelo, M.F., et al., Model based integration of management systems (MSs)–case study. 2016. **28**(6): p. 907-932.
- [46] Ma, T. and A. Zhang, Omics Informatics: From Scattered Individual Software Tools to Integrated Workflow Management Systems. *IEEE/ACM Trans Comput Biol Bioinform*, 2017. **14**(4): p. 926-946.
- [47] Murmura, F., et al., Evaluation of Italian companies' perception about ISO 14001 and Eco Management and Audit Scheme III: motivations, benefits and barriers. 2018. **174**: p. 691-700.
- [48] Antolín-López, R., J. Delgado-Ceballos, and I.J.J.o.C.P. Montiel, Deconstructing corporate sustainability: a comparison of different stakeholder metrics. 2016. **136**: p. 5-17.
- [49] Moumen, M. and H.J.J.o.D.S. El Aoufir, Quality, safety and environment management systems (QSE): analysis of empirical studies on integrated management systems (IMS). 2017. **26**(3): p. 207-228.
- [50] Perrott, B.E.J.J.o.B.S., Building the sustainable organization: an integrated approach. 2015.
- [51] Rybski, C., et al., Empirical study on status of preparation for ISO 9001: 2015. 2017. **28**(9-10): p. 1076-1089.
- [52] Penna, P., et al., Water quality integrated system: A strategic approach to improve bathing water management. *J Environ Manage*, 2021. **295**: p. 113099.
- [53] Chattopadhyay, P., G. Banerjee, and S. Mukherjee, Recent trends of modern bacterial insecticides for pest control practice in integrated crop management system. *3 Biotech*, 2017. **7**(1): p. 60.
- [54] Martín-de Castro, G., et al., Environmental management systems and firm performance: Improving firm environmental policy through stakeholder engagement. 2016. **23**(4): p. 243-256.

- [55] He, W., et al., Impacts of ISO 14001 adoption on firm performance: Evidence from China. 2015. **32**: p. 43-56.
- [56] Vashishth, A., et al., Integrated management systems maturity: Drivers and benefits in Indian SMEs. 2021. **293**: p. 126243.
- [57] Carvalho, F., et al., Critical analysis of information about integrated management systems and environmental policy on the Portuguese firms' website, towards sustainable development. 2020. **27**(2): p. 1069-1088.
- [58] Kiesnere, A.L., R.J.J.C.S.R. Baumgartner, and E. Management, Sustainability management emergence and integration on different management levels in smaller large-sized companies in Austria. 2019. **26**(6): p. 1607-1626.
- [59] Maas, K., S. Schaltegger, and N.J.J.o.C.P. Crutzen, Integrating corporate sustainability assessment, management accounting, control, and reporting. 2016. **136**: p. 237-248.
- [60] Rebelo, M.F., G. Santos, and R.J.S. Silva, Integration of standardized management systems: a dilemma? 2015. **3**(2): p. 45-59.
- [61] Klute-Wenig, S. and R.J.T.T.J. Refflinghaus, Integrating sustainability aspects into an integrated management system. 2015. **27**(3): p. 303-315.
- [62] Rebelo, M., et al., Conception of a flexible integrator and lean model for integrated management systems. 2014. **25**(5-6): p. 683-701.
- [63] De Oliveira, O.J.J.o.C.P., Guidelines for the integration of certifiable management systems in industrial companies. 2013. **57**: p. 124-133.
- [64] Ferreira Rebelo, M., G. Santos, and R.J.T.T.J. Silva, A generic model for integration of quality, environment and safety management systems. 2014. **26**(2): p. 143-159.
- [65] Qi, G., et al., ISO and OHSAS certifications: How stakeholders affect corporate decisions on sustainability. 2013. **51**(10): p. 1983-2005.
- [66] Sampaio, P., et al., Management systems: integration or addition? 2012. **29**(4): p. 402-424.
- [67] Zeng, S., et al., An empirical examination of benefits from implementing integrated management systems (IMS). 2011. **22**(2): p. 173-186.
- [68] Küpers, W.M.J.C.S.R. and E. Management, Integral responsibilities for a responsive and sustainable practice in organization and management. 2011. **18**(3): p. 137-150.
- [69] Santos, G., F. Mendes, and J.J.J.o.c.p. Barbosa, Certification and integration of management systems: the experience of Portuguese small and medium enterprises. 2011. **19**(17-18): p. 1965-1974.
- [70] Oskarsson, K., F.J.C.S.R. Von Malmborg, and E. Management, Integrated management systems as a corporate response to sustainable development. 2005. **12**(3): p. 121-128.
- [71] Kelly, C.M., A primer on the IMS policy forum process. Iowa Med, 2014. **104**(4): p. 26-7.
- [72] Garcia-Valcarcel, A.I., et al., Analysis of pesticide residues in honeybee (*Apis mellifera* L.) and in corbicular pollen. Exposure in citrus orchard with an integrated pest management system. *Talanta*, 2019. **204**: p. 153-162.
- [73] Chang, I.C. and Y.H. Yu, Using sustainable development indicators as a supplementary measure for the integrated management of environmental information system in Taiwan. *Environ Sci Pollut Res Int*, 2001. **8**(2): p. 127-37.
- [74] Armstrong, T.J., et al., Authors' response: Letter to the Editor concerning OCRA as preferred method in ISO standards on biomechanical risk factors. *Scand J Work Environ Health*, 2018. **44**(4): p. 439-440.
- [75] Orojloo, M., S.M. Hashemy Shahdany, and A. Roozbahani, Developing an integrated risk management framework for agricultural water conveyance and distribution systems within fuzzy decision making approaches. *Sci Total Environ*, 2018. **627**: p. 1363-1376.
- [76] Tranfield, D., D. Denyer, and P.J.B.j.o.m. Smart, Towards a methodology for developing evidence-informed management knowledge by means of systematic review. 2003. **14**(3): p. 207-222.
- [77] Dillman, D.A., Mail and Internet surveys: The tailored design method--2007 Update with new Internet, visual, and mixed-mode guide. 2011: John Wiley & Sons.
- [78] Gaa, R., et al., An integrated mammalian library approach for optimization and enhanced microfluidics-assisted antibody hit discovery. *Artif Cells Nanomed Biotechnol*, 2023. **51**(1): p. 74-82.
- [79] Carvalho, K.M., et al., Benefits in the implementation of safety, health, environmental and quality integrated system. 2015. **7**(4): p. 333.