

Tracing the Cost Components in Halal Standard MS 1500:2019 for Production Efficiency

Mohd Rizuan Abdul Kadir

College of Graduate Studies, Universiti Tenaga Nasional, Putrajaya Campus, Malaysia

Keywords

Halal Processing
Production Efficiency
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Abstract

Halal food processing relates very much to production efficiency. The establishment of the halal industry is not merely to comply with a religious requirement, but works as an industry that requires the manufacturers to use resources effectively and avoid wastage in the processes. Currently, this industry is governed by MS1500:2019 requirements that detail out the halal food processes. This requirement has embedded other Islamic values including waste avoidance. However, the cost component is not being stressed in the requirement. Due to the high initial cost to start the halal processing, it is crucial to discuss the cost components. The purpose of this paper is to trace the cost components in MS1500:2019 requirements and to seek an opportunity to incorporate them with cost management. This will allow the business to plan and control the costs, and in the end, will operate efficiently. This paper revealed that there is a similarity concerning the process flow between MS1500:2019 requirements and the Material Flow Cost Accounting (MFCA) technique. It is recommended that some components of MFCA be incorporated in MS1500:2019 and helps in emphasising cost management. This will result in more systematic material flow during the processes that lead to production efficiency.

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1. INTRODUCTION

Halal food relates to more than the foods that are permissible for Muslims. It has other dimensions required in Islam within it. It is not only about the ingredients, but also the whole processing. The requirements to be kind to people and other living creatures are also included. It requires food manufacturers to produce a safe product and be kind to nature. In Quran, the food principle is mentioned, as God says; “*O mankind, eat from whatever is on earth (that is) lawful and good and do not follow the footsteps of Satan. Indeed, he is to you a clear enemy*” (2:168). There are two important connotations about food from the verse, which are, lawful (halal) and good (*thoyyiban*).

The lawful is referred to the food ingredients, which must be permitted in shariah law. However, the word *thoyyiban* applies to a wider scope. *Thoyyiban* is described as a nutritious, good quality, hygiene, authentic and safe food [1]. Thus, the term ‘halal and *thoyyiban*’, represents the symbol of intolerance in hygiene, safety, and quality. This means that the required foods or drinks consumed by Muslims must be beneficial for their health and does not harm their bodies. Muslims are only permitted to take foods or drinks that come from righteous sources. Foods from animals

consumed by Muslims must be slaughtered properly and follow the Islamic requirements [2]. In addition to that, the ways food processing also play an important part in determining the halal status.

Malaysia is a pioneer in introducing a comprehensive standard on food processing. Malaysian Standard on halal prescribes practical requirements for the food industry on the preparation and handling of halal food [3]. Halal is stated in the standard as things or actions that are permitted by Shariah laws without punishment being imposed by the doer [4]. The halal processes and the requirement that governs the halal processes can be visualized as in Figure 1.

With the rapid increase of demand for halal food, the industry is no longer merely an industry that complies with religious requirements, but it has become an economic force in its own right [5]. It is reported that the global halal food market is worth US\$1.1tn in 2013 and is expected to hit US\$1.8tn in 2018 [6]. However, a report of Global Halal Foods Industry estimated the halal foods trading for 2020 is only at US\$1.7tn, due to the Covid-19 pandemic. But it is expected to boom and reaches a revised size of US\$3.2tn by 2027 [7]. Many countries, including the countries where Muslims are a minority, compete to take advantage of the huge halal market. China, as one of them, managed to

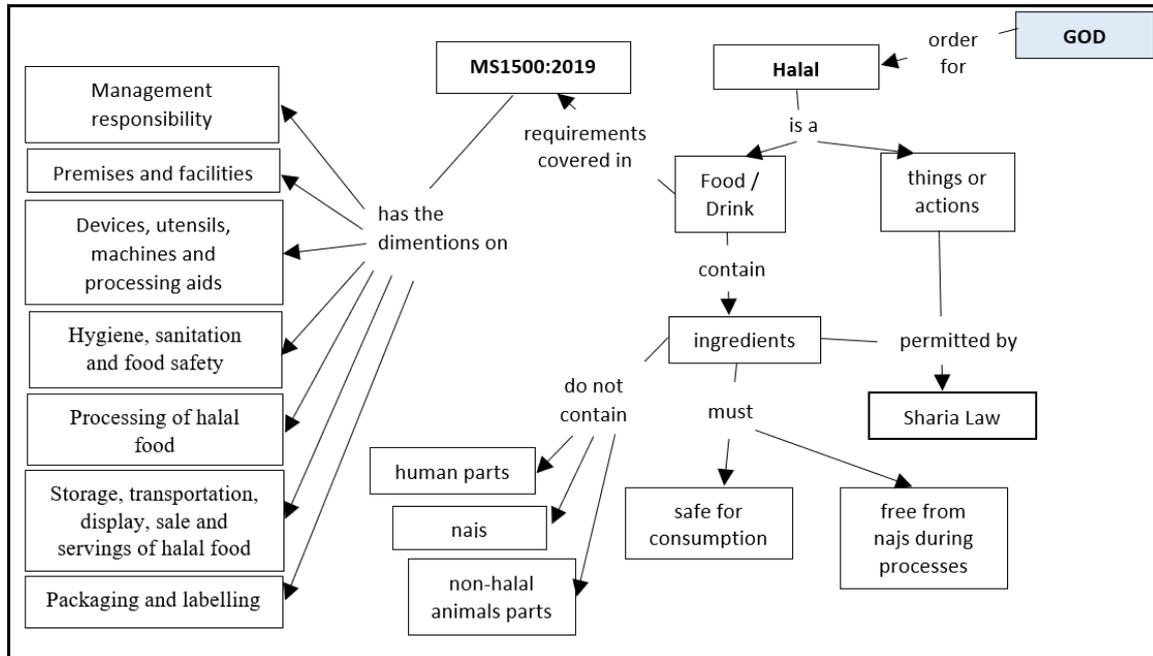


Figure 1. Overview of halal requirements

export \$500 billion of halal food [8].

Muslim countries are competing with each other to become the halal hub. Malaysia, Indonesia, and Pakistan aspire to be the halal hub and aggressively working to become the key players in delivering halal products [7]. Thus, Malaysian halal food manufacturers should take positive actions in quality and halal issues in navigating Malaysia to become the halal hub and grab the global market opportunity [9].

The halal certification issued by JAKIM has indicated a phrase where the manufacturers are getting the assurance in meeting the halal requirement through their ingredients, preparation, processing, hygienic, and sanitation procedures [10]. This also indicates that the practices are consistent with HACCP and other established quality assurance guidelines [10]. The processes also require the manufacturers to follow other Sharia requirements, such as avoiding wastage during the production.

Currently, the requirement of MS 1500:2019 is concentrated on the processes without mentioning the cost components. This paper is designed to trace the specific requirement that reflects the notion of cost during the processing. The study of cost components is crucial to allow the business to control and ensure production efficiency. As among the objectives of halal processing is to reduce the waste during processing, it requires the resources to be effectively used and indirectly lead to environmental preservation. These definitely will affect the production efficiency; a product with similar quality but at a lower cost.

Since halal food processing required a high initial investment, production is expected to be more efficient and managed to reach the break-even point of the initial cost. By tracing halal requirements and their related cost compo-

nents during the processing, a cost management system can be incorporated into the requirements. This will enhance the value of the halal requirements by adding production efficiency as among its objectives.

2. THE COST COMPONENTS AND ITS RELATION WITH MS1500:2019

The cost components are crucial in helping managers to understand the cost structure and behaviour during the processes. Generally, it will allow the managers to plan and control the business costs, which is part of the Management Accounting (MA) function. The Chartered Institute of Management Accountants (CIMA) defined MA as a "process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of information used by management to plan, evaluate and control within an entity and to assure appropriate use of and accountability for its resources."

MA constitutes the central tool for internal management decisions such as product pricing. It is not governed by any law or standard. MA will provide information to help the businesses to operate in the correct way to succeed. In arriving at the decision to be made, the outlined of MA conceptual design [11] shown in Figure 2.

It is reported that the MA concept is evolved [12]. The analysis by IFAC revealed that the practice of MA has shifted from providing beyond information, to focus on the reduction of waste and the generation of value. To succeed in production, material flow and waste planning are crucial. The management is required to understand thoroughly the processes involved in their production. The is also the requirement in halal processes where the material

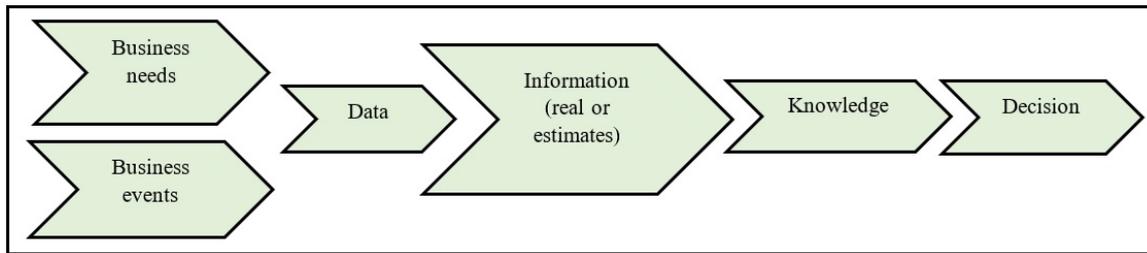


Figure 2. The MA Conceptual Design

flow is part of MS1500:2019.

The MS1500:2019 Halal Food – General Requirements (third revision) is a policy to guide the production, preparation, handling, and storage of halal food products in Malaysia. The first revision was launched in August 2004. It is the commitment of Malaysia’s government towards the production of halal food [3]. The requirement is bonded with MS1480 and MS1514, which are guidelines on safety and hygiene of the food produce, respectively. To be precise, the MS1480 is a standard for food safety in terms of Hazard Analysis and Critical Control Point (HACCP), and the MS1514 is a general principle of food hygiene that describes the compulsory hygiene requirement.

The MS1500:2019 sets down the necessary and minimum requirement for halal food processing [13]. It is a system approach, not a product approach. It starts from the early phase of food products such as the selection of raw materials at the premise and ends when the food is served to the consumers. It was issued through a consensus in a committee that comprises a balanced representation of manufacturers, users, consumers, and other relevant parties.

There are seven dimensions described in MS1500:2019, which are (i) management responsibility, (ii) premises and facilities, (iii) devices, utensils, machines, and processing aids, (iv) hygiene, sanitation, and food safety, (v) processing of halal food (vi) storage, transportation, display, sale, and servings of halal food, and (vii) packaging and labelling.

As described earlier, halal is not a symbol of Muslim food only, but it is a description of quality in terms of safety, hygiene, and the processes [1], which was prepared to follow Sharia requirements. It should be noted that Islam does not only represent a personal religion, as it shows how certain methods can benefit society, by serving as a guide for each conduct [14].

Islam also does not only provide the ruling but also the rationale behind the rule [15]. Conducting halal processes by following the Islamic law will not only result in producing a good quality of food, but the act may has benefits beyond that. The halal processes that are concerned with safety, hygiene, and quality aspects will affect the process flow of a product [1]. Initially, the processes must be free from contamination and have a proper waste management system. This is to follow the Islamic principle that prohibits waste, as God says, “*O children of Adam! ... eat and drink: but waste not by excess, for Allah loves not the wasters.*”

(Qur’an7:31).

MS1500:2019 has embedded in the requirements related to the values of safety (traceability of the resources used), cleanliness (environment preservation), hygienic (smooth processing flow to avoid contamination), and avoid wastage (waste management and effective use of resources). The values embedded would require a good system and a substantial amount of initial investment. However, through a good processing practice, it would become a cost-saving in the long run. With proper planning at the initial stage, the benefits, in the long run, are expected to exceed the cost incurred [12], [16], [17].

These values have been embedded in the MS1500:2019 requirements and the cost components associated with them need to be determined. Understanding the costs during the processes is very important as it is part of the planning and controlling the resources. Based on the review of MS1500:2019 requirements, the scope of the processes, and the costs to manage are shown as in Table 1.

This paper is designed to trace the cost components in halal requirements and look towards the possibility to incorporate them with the MA techniques. The main purpose is to ensure that the effective use of resources is attained as intended. The MA technique that is concerned very much with the processes flow and waste management is called Material Flow Cost Accounting (MFCA).

3. MFCA TECHNIQUE

MFCA is a technique that concentrates on the waste during processes. The end purpose is to trace the material loss and the cost associates with it by turning the waste into other opportunities. The effectiveness of MFCA has been recognised and published as international standard ISO14051:2011 Environmental Management – Material Flow Cost Accounting – General Framework. MFCA is a tool developed to enable efficient material usage environmentally and economically, thus improve resource efficiency [18], [19].

ISO14051:2011 defined MFCA as a “tool for quantifying the flows and stocks of materials in processes or production lines in both physical and monetary units”. MFCA focuses on accurate tracing of the materials flow throughout a facility, as well as on the identification of all significant quantities and costs associated with those materials flow [12]. It is one of the most promising tools for cost efficiency and

Table 1. The dimension, scope and costs to manage

Dimension	Scope	Cost to Manage
Management responsibility	Conditions to the needs of Muslim officers and commitment towards preserving halal integrity	<ul style="list-style-type: none"> • Training cost on halal processes • Provide sufficient personnel for halal operation control
Premises and facilities	Layout constructed to allow process flow is free from contamination and suitable for intended use	<ul style="list-style-type: none"> • Layout permit proper process flow and employee flow • Process flow from receipt of raw material to finished product • Effective use of loading bay • Maintain the premises
Devices, utensils, machines and processing aids	The device used are clean, regularly maintain and easy to clean.	<ul style="list-style-type: none"> • Device shall be washed and ritually cleansed as required by Shariah
Hygiene, sanitation and food safety	Environment before and during the food processing is always clean	<ul style="list-style-type: none"> • Inspecting material for processing • Manage waste effectively • Store harmful chemical appropriately and away from halal food (safety)
Processing of halal food	Processing animal and plant to make the halal food (including slaughtering process)	<ul style="list-style-type: none"> • Cost of inspection to ensure processing meets the requirements
Storage, transportation, display, sale and servings of halal food	Storage and transport the finished product for sale purposes	<ul style="list-style-type: none"> • Cost of categories and label halal product • Cost of using appropriate transportation
Packaging and labelling	Packaging and labelling for sale purposes	<ul style="list-style-type: none"> • Cost of packaging as required by the requirements

the preservation of the environment [20]. MFCA applies to any business that uses materials and energy, regardless of its products, services, size, structure, location, and existing management and accounting systems (ISO14051).

As stated in MS1500:2019 that required a proper recording flow in halal processing, the same feature is required by MFCA. However, MFCA requires a more extensive and systematic flow of data, specifically related to the material quantity and the cost associated during the processing flow. In MFCA implementation, the number of input materials must be consistent with the sum of products and material losses (wastes). It requires a business to trace the materials flow during the product processing, quantifiability the output in terms of finished product and material wastes, and identification of where and how much material wastes are generated.

The material waste (material loss) is recognised as “another” product in MFCA calculation [21]. As the MFCA assumes that material losses are produced in the line, the processing costs need to be involved in the material loss cost. Thus, in addition to material costs and processing costs, waste disposal costs are also added to the cost of waste. In the calculation of both product and material losses, not only the cost of the input materials is calculated, but it also involved the processing costs such as labour costs and depreciation costs. The outlined concept of MFCA is illustrated in Figure 3.

With the MFCA technique, the information provided will allow management to consider the options for reducing or substituting product material, for example, reducing weight

more systematically, increasing recyclability, and supporting environmental improvements in products and processes (ISO14051). The costs of material losses calculated by MFCA can act as a motivator for businesses and managers to seek opportunities that simultaneously generate financial benefit by effective use of resources, reducing material costs, and reducing adverse environmental impacts [20]. This in return will lead to improving production efficiency.

The MS1500:2019 requirements mentioned the material flow in general. In brief, the MS1500:2019 and ISO14051 have a common feature concerning this matter in the processing flow. However, the purposes of the processing that these standards focus on are different from one another. The MS1500:2019 concentrates on the processes to ensure the resources used are free from contamination and away from wastage. Whereas, the ISO 14051:2011 concentrates on the determination of material loss and turn it into business income. The common feature but different purposes on the practices of the requirements are illustrated in Figure 4.

section Discussion - Production Efficiency in Halal Food Requirements

The common feature of MS1500:2019 and ISO14051:2011 shall become a starting point to merge the practices. The current requirements on halal processing do not specifically mention the cost components, but the practice of requirements to avoid wastage has indirectly called for a proper cost management system. To enhance the processes and ensuring production efficiency in halal food processes, it is suggested that some components of ISO14051:2011 are incorporated in halal requirements

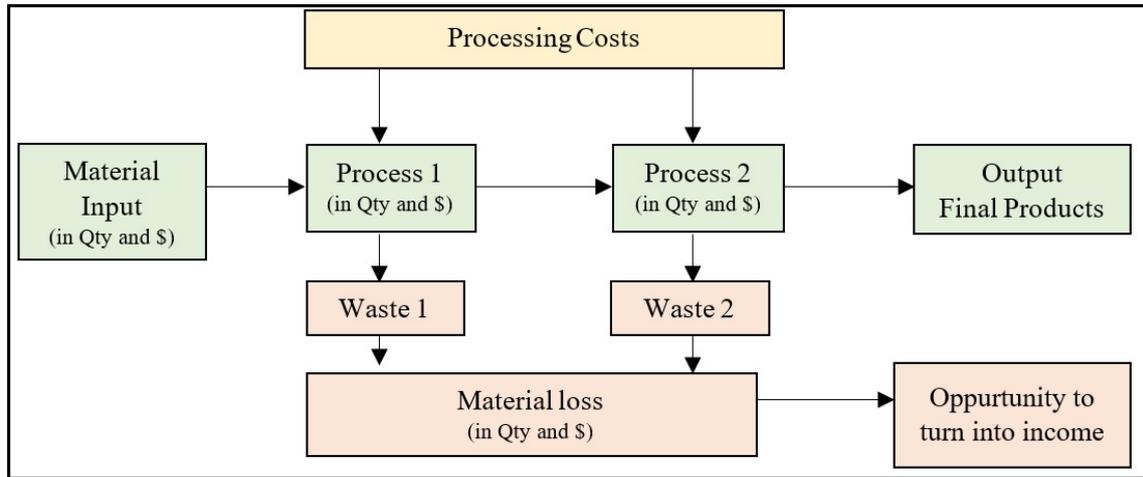


Figure 3. The outlined concept of MFCA

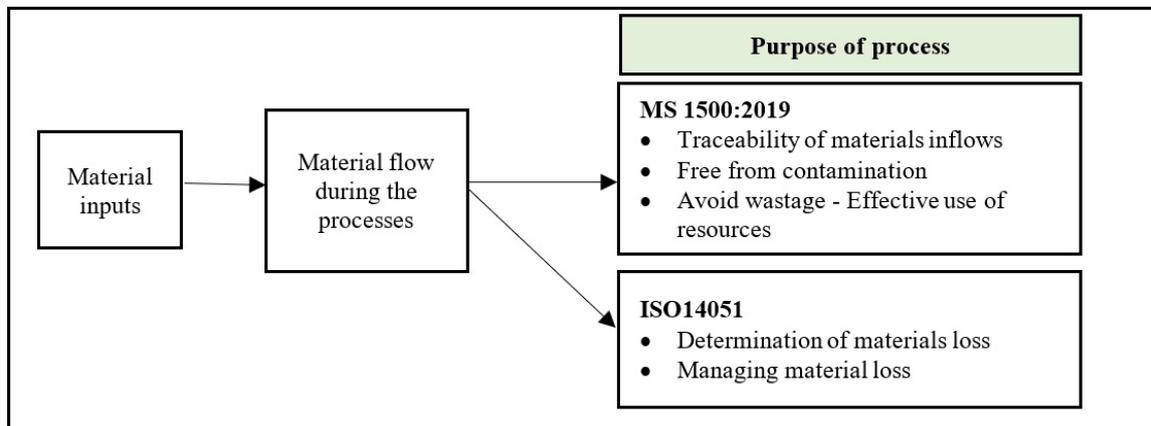


Figure 4. The feature and purpose of the requirements

MS1500:2019.

This will enhance the value of halal processes, where production efficiency will become among the main objectives. Through the practices, halal food manufacturers can maintain the quality of products, and at the same time are operating at a lower cost. All of these will result in a reduction in wastes, effective use of resources, and environmental preservation. The framework suggests merging practices and the expected result is outlined as in Figure 5.

With the incorporation of some MFCA components into halal processes, it is expected that proper handling of waste production and effective use of resources can be practiced during the processes. This in return will reduce the cost of production. In fact, this is also being by highlighted, where a skillful application of MFCA has enabled some companies to increase their productivity and reduce adverse environmental impacts [20].

Although the MFCA can contribute to the sustainable development of businesses, the economy, and society, the management system needs to be adjusted for it to be implemented [17]. It would require businesses to understand the processes thoroughly and create a new procedure to determine material losses. The managers need to open up their

minds to accept any discrepancies and ineffectiveness that could occur in their current practices. To accept the fact of the ineffectiveness of their operation could be hard for some managers and can become a major obstacle in implementing the MFCA. To encourage the practice of MFCA, managers need to agree on the system and avoid conflicts [20].

4. CONCLUSION

The cost components in the halal processing requirement MS1500:2019 is crucial to trace. This paper discussed conceptually halal processing and how the MFCA components can be incorporated into it. Since both practices have promoted the input and output of material flows during the processes, a likewise post-structural study is recommended to be conducted to enhance the processing requirements by incorporating with some components of MFCA. In accounting research, a post-structural would refer to a modification on the current system to fit with the new environment [22].

A thorough understanding of halal processes is required before proceeding with any enhancement. This paper is largely based on the literature and the standard issues on the practices. To implement the MFCA, the basis under-

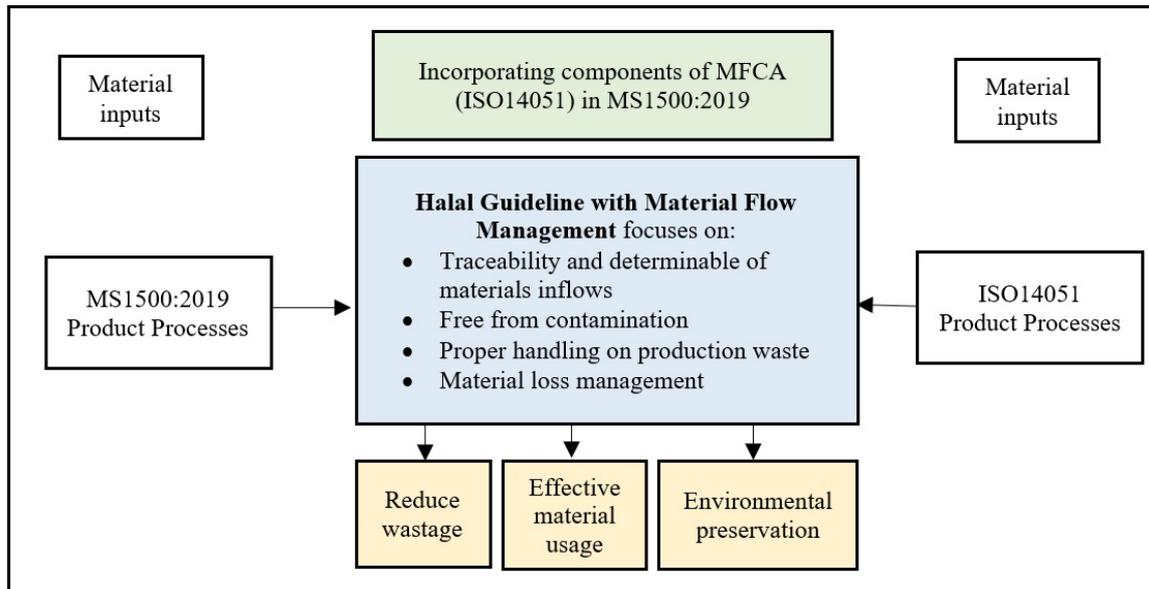


Figure 5. The framework suggested to merge the practice

lying the halal processes need to be understood due to the importance of processing input and output data. Currently, the MS1500:2019 did mention the need to maintain a good record on materials and processing, but the actual practices on such requirements need to be assessed. This will help in smoothing the implementation of some MFCA components in halal processes.

Halal food processing shall be looked beyond the issue of food requirements for Muslims. It not only about permissible ingredients and food safety but also incorporated a good processing practice. It requires material to be effectively utilised and reduce wastage, which also resulted in environmental preservation. Even though there are additional costs required to set-up the system, but with proper planning, the cost-saving from the processing would be expected to further reduce the cost, and in the long run might increase the company profit [20]. These will encourage more food manufacturers to engage with halal processes as it is also involved with production efficiency.

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REFERENCES

- [1] M. Saifuddeen, *Food and Technological Progress: An Islamic Perspective*. MPH Group Pub., 2006.
- [2] H. Ahmad, A. Fazullah, A. J. Borham, H. Hashim, and M. Abd Razak, "Halal studies in universities: A way forward to manage halal business," *International Journal of Arts & Sciences*, vol. 4, no. 9, p. 247, 2011.
- [3] Z. Samori, A. H. Ishak, and N. H. Kassan, "Understanding the development of halal food standard: Suggestion for future research," *International Journal of Social Science and Humanity*, vol. 4, no. 6, p. 482, 2014.
- [4] R. Kamaruddin, H. Iberahim, and A. Shabudin, "Halal compliance critical control point (hcccp) analysis of processed food," in *2012 IEEE Business, Engineering & Industrial Applications Colloquium (BEIAC)*, IEEE, 2012, pp. 383–387.
- [5] N. Mohamad and C. Backhouse, "A framework for the development of halal food products in malaysia," in *Proceedings of the 2014 International Conference on Industrial Engineering and Operations Management*, vol. 10, 2014, pp. 693–702.
- [6] E. Beer. (2016). "Global halal market to hit \$1.6tn by 2018," [Online]. Available: <http://www.foodnavigator.com/Regions/Middle-East/Global-Halal-market-to-hit-1.6tn-by-2018>.
- [7] Reportlinker, *Global halal foods industry*, Available at Global Halal Foods Industry (reportlinker.com), 2020.
- [8] S. Dasgupta. (). "China makes dent in halal market with 1/8th of india's muslim population," [Online]. Available: http://articles.timesofindia.indiatimes.com/2011-09-21/china/30183710%5C.1%5C_halal-china-countries.
- [9] H. A. Talib, K. M. Ali, K. Jamaludin, and K. Rijal, "Quality assurance in halal food manufacturing in malaysia: A preliminary study," in *Proceedings of International Conference on Mechanical & Manufacturing Engineering (ICME2008)*, 2008, pp. 21–23.

- [10] A. Sumali, "Halal: New market opportunities," in *Proceedings at the 9th Efficient Consumer Response (ECR) Conference*. Retrieved on July, vol. 29, 2006, p. 2009.
- [11] E. Blocher, H. Glover, Z. Khan, M. Kovacic, J. Thompson, A. van der Merwe, and G. Weiss, *Definition of management accounting*, 2008.
- [12] P. Committee, *International guidance document: Environmental management accounting*, 2005.
- [13] A. S. Jais, "The ms1500:2019 halal food - general requirements (3rd revision): What's new, what's old, what's next?" *Halal Note Series – Halal Common*, no. 2, 2019.
- [14] R. Kamla, S. Gallhofer, and J. Haslam, "Islam, nature and accounting: Islamic principles and the notion of accounting for the environment," in *Accounting Forum*, Taylor & Francis, vol. 30, 2006, pp. 245–265.
- [15] D. Y. Al Qaradawi, *Fiqh al zakah (Vol. 1) A Comparative Study of Zakah, Regulations and Philosophy in The Light of Qur'an and Sunnah*, I. Siddiqui, Ed. Petaling Jaya: Islamic Book Trust, 2011.
- [16] W. Qian, R. Burritt, and G. Monroe, "Environmental management accounting in local government," *Accounting, Auditing & Accountability Journal*, 2011.
- [17] S. Schaltegger and D. Zvezdov, "Expanding material flow cost accounting. framework, review and potentials," *Journal of Cleaner Production*, vol. 108, pp. 1333–1341, 2015.
- [18] K. L. Christ and R. L. Burritt, "Iso 14051: A new era for mfca implementation and research," *Revista de Contabilidad*, vol. 19, no. 1, pp. 1–9, 2016.
- [19] C. J. Nyide, "Material flow cost accounting as a tool for improved resource efficiency in the hotel sector: A case of emerging market," *Risk governance & control: financial markets & institutions (Online)*, 2016.
- [20] K. Kokubu and H. Kitada, "Material flow cost accounting and existing management perspectives," *Journal of Cleaner Production*, vol. 108, pp. 1279–1288, 2015.
- [21] M. Nakajima, "The new management accounting field established by material flow cost accounting (mfca)," *Kansai University review of business and commerce*, no. 8, pp. 1–22, 2006.
- [22] C. Koornhof and C. J. De Villiers, "Postmodernism and accounting: Mirror or myth?," 1999.