

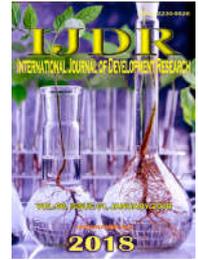


ISSN: 2230-9926

Available online at <http://www.journalijdr.com>

IJDR

International Journal of Development Research
Vol. 08, Issue, 01, pp.18171-18175, January, 2018



REVIEW ARTICLE

OPEN ACCESS

HALAL FOOD CHAINS - CONCEPTS AND OPPORTUNITIES IN PAKISTAN

^{1,*}Dr. Muhammad Sohail Mazhar, ²Dr. Babar Ehsan Bajwa and ³Dr. Ray Collins

¹Project Manager, Centre for Agriculture and Biosciences International, Rawalpindi, Pakistan

²Regional Director, Centre for Agriculture and Biosciences International (CWA), Rawalpindi, Pakistan

³Professor Emeritus, University of Queensland, Brisbane, Australia

ARTICLE INFO

Article History:

Received 18th October, 2017

Received in revised form

07th November, 2017

Accepted 20th December, 2017

Published online 31st January, 2018

Key Words:

Certification,

Food Chains,

Governance, *Halal*, Value.

ABSTRACT

Halal, in terms of food commodities, refers to food material, ingredients and the production process, which is permissible for *Muslims* for consumption. With increasing awareness about food and its quality, safety and origins, consumers are becoming more and more informed if they are buying the same product for which they are paying. In the case of *Halal* food there are certifying bodies to warrant that *Halal* food materials are prepared and processed for consumption through *Halal* procedures. Pakistan is the world's second largest *Muslim* country. However, the implementation of *Halal* certification for food in Pakistan is neither standardized nor compulsory. This article reviews the possibility of standardization of *Halal* food chains in Pakistan. Review of literature clarifies the concept of *Halal* and its scope in the world. Malaysian *Halal* food industry is reported as an example and the article is concluded at the possibility of application of the concept of *Halal* in the food chains of Pakistan. Ideally, *Halal* certification systems in Pakistan should incorporate issues of standardization, infrastructure, traceability and auditing, while ensuring the trust of consumers in both the certified system and its stakeholders along the producer-to-consumer chain. Achieving genuine commitment from these *Halal* food chain stakeholders as well as clearly defining the role of government in policing the integrity of *Halal* food chains is key requirement to establishing an effective and sustainable *Halal* system. Such a system would provide a platform for improving consumer confidence and increasing the export of *Halal* food commodities from Pakistan.

Copyright © 2018, Dr. Muhammad Sohail Mazhar et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Dr. Muhammad Sohail Mazhar, Dr. Babar Ehsan Bajwa and Dr. Ray Collins, 2018. "Halal food chains - concepts and opportunities in Pakistan", *International Journal of Development Research*, 8, (01), 18171-18175.

INTRODUCTION

The concept of *Halal* comes from *Islam* (Boustany, 2016), a religion followed by about 23% of the world's population (SESRIC, 2013). Those who follow and practice *Islam* are called *Muslims*. *Muslims* take guidance on every matter relating to living a productive life in a society from a divine book, the *Quran*, and the practice of Prophet Muhammad PBUH, the *Sunnah* (N. Hussain, Anwar ul Haq, Zafar-uz-Zaman, and Usman, 2014). According to the *Quran*, anything permissible for consumption or to practice in everyday life is referred to as *Halal* (Boustany, 2016). This article deals only with food practices, hence general *Halal* practices and the way of life are not discussed.

Corresponding author: Dr. Muhammad Sohail Mazhar,

¹Project Manager, Centre for Agriculture and Biosciences International, Rawalpindi, Pakistan.

The *Quran* clearly mentions food as either permissible, *Halal*, or forbidden, *Haram* (Riaz and Chaudry, 2003). An English translation of some of the relevant verses by Pickthall (1992) states:

"O you who have believed, eat from the good things which We have provided for you and be grateful to Allah if it is [indeed] Him that you worship. *Quran* 2:172"

"Prohibited to you are dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah, and [those animals] killed by strangling or by a violent blow or by a head-long fall or by the goring of horns, and those from which a wild animal has eaten, except what you [are able to] slaughter [before its death], and those which are sacrificed on stone altars, and [prohibited is] that you seek decision through

divining arrows. That is grave disobedience. This day those who disbelieve have despaired of [defeating] your religion; so fear them not, but fear Me. This day I have perfected for you your religion and completed My favour upon you and have approved for you Islam as religion. But whoever is forced by severe hunger with no inclination to sin - then indeed, Allah is Forgiving and Merciful. Quran 5:3 "O you who have believed, indeed, intoxicants, gambling, [sacrificing on] stone alters [to other than Allah], and divining arrows are but defilement from the work of Satan, so avoid it that you may be successful. Quran 5:90"

Examples of the food products which are forbidden (*Haram*) in *Islam* are carrion, pork, alcohol and blood (N. Hussain et al., 2014; Regenstein, Chaudry, and Regenstein, 2003). Issues associated with *Haram* food are beyond the scope of this article. A *Halal* food chain is one where all the input supplies, materials, production, processing, logistics, handling and trade in a food product, from the point of origin until the food reaches consumers, follow the permissible guidelines of *Islamic law* (Riaz and Chaudry, 2003).

The global market for *Halal* food

Demand for *Halal* certified food in the world market, which is currently valued at approximately USD 700 billion, is gradually increasing (SESRIC, 2013). Leading exporters of *Halal* food include Argentina, Australia, Brazil, Canada, France, India, Indonesia, Malaysia, New Zealand, Philippines, Russia, Thailand and United States of America (SESRIC, 2013). The Middle East and Gulf countries are the largest import markets for *Halal* certified food. Interestingly, there is no *Muslim* country in the top 10 exporters of *Halal* certified food to Middle Eastern countries, to which the largest exporters of beef are America and Australia, and the largest suppliers of chicken meat are Brazil and France (Alam, 2016).

A model of *Halal* food chains: Malaysia

Malaysia has the most developed *Halal* food industry in the *Muslim* world (Bohari, Cheng, and Fuad, 2013; Zailani, Arrifin, Abd Wahid, Othman, and Fernando, 2010), though the need for *Halal* certification as a basis for food industry development was realised only relatively recently (Shafie and Othman, 2006). For example, Talib, Ali, Anuar, and Jamaludin (2008) reported on the adoption of *Halal*-based quality assurance in food manufacturing and Tieman (2011) discussed the concept of *Halal* in food chain management. Tieman, van der Vorst, and Che Ghazali (2012) documented the principles of managing *Halal* food supply chains. The concept of *Halal* logistics, including operations at warehouses, during transportation and at terminals, was first described in Malaysia by Jaafar, Endut, Faisal, and Omar (2011), followed by research on *Halal* logistics reported by Tieman (2013). Mohamad and Backhouse (2014) developed a framework for sustainable *Halal* food industry development in Malaysia, while the concepts for enhancement of the integrity of *Halal* food supply chains were introduced by Zulfakar, Anuar, and Ab Talib (2014). Ngah, Zainuddin, and Thurasamy (2014) identified and reported on the barriers to adoption of *Halal* practices in food supply chains by Malaysian food manufacturers. Each of these authors acknowledged that a food product delivered to a consumer cannot be certified *Halal* if all the operations in the supply chain for that product do not follow *Halal* guidelines.

At the same time, most authors also mentioned that achieving through the supply chain certification means overcoming a range of barriers in complying with certification requirements. Central to the development of any successful *Halal* certified system is an understanding of the preferences and intentions of consumers, as highlighted by Yusoff, Yusof, and Hussin (2015). Most recently, beside the enforcement of a relatively strong *Halal* food supply chain system, monitoring of the process and continuous consumer feedback is implemented. *Halal* food certification in Malaysia is governed and implemented solely by the *Department of Standards Malaysia*. This department initially developed *Halal* standards in consultation with representatives of all the industry stakeholders including producers, manufacturers, processors, allied services providers, consumers, and regulatory bodies. Since then, at one end it has been engaged in continuous review, monitoring, and implementation of its certification standards (Halim and Salleh, 2012) and at other end consumer awareness programs have been launched and actively conducted to increase the demand of *Halal* certified food products. *Muslim* consumers in Malaysia now are not only concerned about *Halal* certification of the products they buy but they are also concerned to acquire a deeper knowledge of the food ingredients and procedures used in the production and preparation of food. They also expect continuous monitoring of the application of *Halal* certification standards (Abdul, Ismail, Hashim, and Johari, 2009). Interestingly, non-*Muslim* consumers of *Halal* food in Malaysia also acknowledge the socioeconomic, health and food safety benefits of consuming *Halal* food (Rezai, Mohamed, Shamsudin, and Chiew, 2010).

Halal food chains in Pakistan

Pakistan is the world's second largest country, after Indonesia, whose official religion is *Islam* (Haqqani, 2004; Peach, 1990). According to unofficial sources, the population of Pakistan is almost 200 million and growing at 1.6% per year (Coale and Hoover, 2015). About 97% of the population of Pakistan follows *Islam* (Zia, 2003). It is predominantly believed that all food commodities marketed in Pakistan are *Halal* (Salman and Siddiqui, 2011); and there was very little consumer awareness of certified *Halal* food in Pakistan until the Federal Ministry of Science and Technology recently discovered the marketing of twenty three *Haram* food commodities (PNAC, 2016b). As it was found that these *Haram* food products had been imported from other countries, the Government of Pakistan passed a resolution requiring *Halal* certification of all food commodities entering Pakistan from elsewhere in the world. This event also alarmed the responsible authorities to start thinking about establishment of a system of *Halal* food production and marketing in Pakistan.

Currently there are more than 50 *Halal* certifying agencies in Pakistan (Awan, Siddiquei, and Haider, 2015), but only a few of these agencies are accredited by the relevant institute of the Government of Pakistan. Most certifying agencies operate autonomously in affiliation with international food quality and safety certification agencies. The relevant agency of Government of Pakistan responsible for the accreditation of certifying bodies is the Pakistan National Accreditation Council (PNAC) which is administratively controlled by the Federal Ministry of Science and Technology (PNAC, 2016b). Presently only four *Halal* certifying bodies in Pakistan are accredited by PNAC (PNAC, 2016a).

An example is the Punjab Halal Development Agency (PHDA), which operates under the Punjab provincial government and is responsible for *Halal* certification, capacity building, and advisory services (PHDA, 2016). Some of the private sector *Halal* certifying bodies include the Islamic Food and Nutrition Council of America (IFANCA), South African National Halaal Authority (SANHA) Pakistan, Halal Research Council, Direct Assessment Services (DAS) Certification, Halaal Foundation, SGS Agriculture and Food, and the Halal Industry Research Centre of Pakistan. Generally these bodies follow their own varying guidelines for the certification of *Halal* food ingredients and production and handling practices. As a result of this diversity, a range of *Halal* brands certified by different agencies are available on the retail shelves of major supermarkets of Pakistan (Awan et al., 2015). There remains a need to unify the standards of *Halal* food production and handling practices even though the certification may be offered through any number of certifying bodies.

An unpublished pilot study conducted to explore the status of *Halal* food chains in Pakistan found that the proportion of *Halal* certified products is not more than 20% of the total number of food commodities available on the retail shelves of major supermarkets in Pakistan. The pilot study also identified that some of the well-known brands of food commodities such as confectionary, dairy and dairy products, biscuits, tea, coffee, cooking oils, juices, and soft drinks were sold in supermarkets without *Halal* certification labels. Formal studies have shown that consumer awareness of certified *Halal* food is also very low (Salman and Siddiqui, 2011). This is possibly because the consumers in Pakistan assume that all the food material available on retail shelves in Pakistan is *Halal*. According to Salman and Siddiqui (2011), food should not be considered *Halal* if it is not endorsed by a *Halal* certification body. Staff in one large supermarket reported that the majority of shoppers do not demand *Halal* certified products, nor do the manufacturers, producers or suppliers attempt to market food as *Halal* certified (personal comm. Mr Shahid Ali, Floor Manager, Metro Cash and Carry Islamabad). Nevertheless there is not a single *Halal* certified food chain known in Pakistan (personal comm. Mr A. Ghaffoor, Floor Manager, Metro Cash and Carry Islamabad). Salman and Siddiqui (2011) refer to this as a gap in the area of consumer awareness and other authors have seen it as a potential opportunity for food certifying bodies (Awan et al., 2015), especially as all existing *Halal* certifying bodies in Pakistan claim the capacity to certify that food material and the process of preparation and handling of food material is *Halal*. The Government of Pakistan needs to embark on the footsteps of Malaysian Government to standardize the 'through the chain' *Halal* certification protocols, implementation through certification bodies in open market, and a well-structured and robust monitoring and enforcement system.

Adulteration of food commodities is reported from time to time in Pakistan (Khan, Abbas, Naeem, Ayaz, and Akhter, 2013). A *Halal* food product does not remain *Halal* if it comes in contact with a *Haram* food product or is adulterated with a non-*Halal* product. Modernisation of *Halal* food processing presents particular problems. For example, shortcomings of the mechanised processing of cattle for meat have been reported (Qureshi et al., 2012), when an animal may die before proper slaughtering in the mechanized environment (Riaz and Chaudry, 2003). As suggested by Ayyub, Rana, Bagi, and Al-Thomaly (2013), the Pakistan meat industry should ascertain

the authenticity of its slaughtering procedures if it is to be competitive in international high end *Halal* meat markets. Also the processors use enzymes and chemicals in food production. In dairy, confectionery, and bakery products for example, the use of enzymes, gelatin and emulsifiers is common. In this context, input suppliers and processors need to ascertain that such additives are derived from *Halal* sources (Riaz and Chaudry, 2003). Otherwise, they may find media campaigns used (Moiz and Khan, 2014) to notify consumers whether foods produced under commonly understood *Halal* conditions may be contaminated with additives that are *Haram* (Tieman, 2013) or may be processed in a way that becomes *Makrooh* (the food or an action which is disliked according to the *Islamic law*). Clearly there is a need for the whole food chain system to be certified, as opposed to only the food commodity being declared *Halal*.

The scope for *Halal* food chains in Pakistan

Pakistan is an agriculture based country (Van der Hoek et al., 2002). After meeting its domestic food needs, it exports fresh, raw and processed food to regional and international markets and contributes to feed the growing world population (I. Hussain, Mahmood, Akhtar, and Khan, 2007). With increasing consumer awareness of food quality, safety and origins, the demand for *Halal* certified food is increasing worldwide. However, sustainably increasing the trade in *Halal* food depends on ensuring consumer confidence. Consumers demand more than just food manufactured and processed under *Halal* conditions. In addition they require that food is handled, transported, stored and marketed through *Halal* certified, well organised, robust, effective and efficient value chains. In the world *Halal* food market valued at around USD 700 billion, Pakistan contributes only USD 28 million, or about 0.5% of world *Halal* food needs (SESRI, 2013). Opportunities lie beyond *Muslim* markets as the demand for *Halal* certified food is also increasing among non-*Muslim* consumers who seek *Halal* certified food for its food safety, and health benefits (Rezai, Mohamed, and Nasir Shamsudin, 2012).

The concept of *Halal* food chain management is now emerging in Pakistan, with policy makers, industry stakeholders and consumer groups involved in discussions and negotiations. Motivating these consultation processes are clear opportunities for existing food chains to benefit from standardisation to deliver *Halal* food to consumers in both domestic and international markets. Pakistan is geographically located to cater to the wealthy and demanding *Halal* markets of Middle East and Gulf countries. Additionally, if the food chains of Pakistan are certified to cater *Halal* food to international markets, *Muslim* consumers living in developed countries may prefer to buy food products from a *Muslim* country of origin.

Strategy for strengthening *Halal* food chains in Pakistan

There is a clear scope and rationale for Pakistan to develop *Halal* food chains for each food item so as to meet its own consumer demands as well as capturing a greater share of the world market for *Halal* food. Besides the traditional *Halal* certified meat chains, examples include confectionery, dairy products, bakery items, fresh cut fruit and vegetables, dried and value added products, and raw material for processing and preparation of food. Local and customized case studies are suggested to test known concepts of through the supply chain

collaboration and value chain principles to identify solutions for certified *Halal* food value chains. Based on the results of previous studies and customised case studies (Tieman, 2014), government and industry stakeholders are recommended to collaborate both vertically and horizontally. Vertical collaboration occurs between subsequent levels in a chain, such as between producers and processors, processors and retailers, and so on. Horizontal collaboration occurs among stakeholders at the same level, such as among producers, processors or retailers. In both cases there is a role for government involvement to negotiate, codify, implement, monitor and enforce certification standards and systems.

Other suggestions include shopper awareness programs to raise awareness of *Halal* certified food products (Salman and Siddiqui, 2011) and standardisation of mechanized slaughtering methods to meet international *Halal* specifications (Ayyub et al., 2013). Across all examples, continuous auditing and monitoring of *Halal* certification is crucial because if due diligence is not practiced, the confidence of consumers and markets can quickly be compromised. In the case of the chocolate industry in Malaysia, for example, what started as in full compliance with *Halal* standards later was found to be compromised by the use of emulsifiers derived from *Haram* sources (Shariff and Lah, 2014). Ultimately, food chains are human-managed systems whose performance is as much influenced by relationships among the people managing the businesses that make up a chain as by its technical characteristics. Strong, clearly-focused partnerships can make the development and implementation of certified *Halal* food chains far more effective, efficient and sustainable. However such changes are difficult or impossible to accomplish without external assistance, yet most government agencies are not qualified or resourced to provide such assistance. Typically businesses and governments rely on specialist providers in this arena. One example in Pakistan is CAB International (CABI), which has specific strengths in food chain research and development. It has a proven track record in conducting consumer focused research on the demand for, and supply of, *Halal* certified food products; it can develop and conduct consumer awareness programmes aimed at increasing the demand for certified *Halal* food products; and it can build the capacity of food producers and marketers to produce and handle food to comply with *Halal* requirements.

REFERENCES

- Abdul, M., Ismail, H., Hashim, H. and Johari, J. 2009. Consumer decision making process in shopping for halal food in Malaysia. *China-USA Business Review*, 8(9), 40-47.
- Alam, A. R. 2016, February 24, 2016. Pakistan has negligible share in global halal food market Business, *The Nation*. Retrieved from <http://nation.com.pk/business/24-Feb-2016/pakistan-has-negligible-share-in-global-halal-food-market>
- Awan, H. M., Siddiquei, A. N. and Haider, Z. 2015. Factors affecting Halal purchase intention—evidence from Pakistan's Halal food sector. *Management Research Review*, 38(6), 640-660.
- Ayyub, R. M., Rana, A., Bagi, A. R. A. and Al-Thomaly, A. A. 2013. Exploring future markets for Pakistani Halal meat export. *International Journal of Social Entrepreneurship and Innovation*, 2(1), 11-20.
- Bohari, A. M., Cheng, W. H. and Fuad, N. 2013. An analysis on the competitiveness of halal food industry in Malaysia: an approach of SWOT and ICT strategy. *Geografia: Malaysian Journal of Society and Space*, 9(1), 1-11.
- Boustany, M. 2016. The *Halal* and *Haram* of food. Retrieved 12 March 2016, 2016, from http://www.detailedquran.com/quran_data/Halal%20and%20haram%20food%20in%20Qur'an.htm
- Coale, A. J. and Hoover, E. M. 2015. *Population growth and economic development*: Princeton University Press.
- Halim, M. A. A. and Salleh, M. M. 2012. The possibility of uniformity on halal standards in organization of Islamic countries (OIC) country. *World Applied Sciences Journal*, 17(17), 6-10.
- Haqqani, H. 2004. The role of Islam in Pakistan's future. *Washington Quarterly*, 28(1), 83-96.
- Hussain, I., Mahmood, M. S., Akhtar, M. and Khan, A. 2007. Prevalence of *Campylobacter* species in meat, milk and other food commodities in Pakistan. *Food microbiology*, 24(3), 219-222.
- Hussain, N., Anwar ul Haq, M., Zafar-uz-Zaman, and Usman, M. 2014. Global halal food market and opportunities for Pakistan. *International Journal of Education and Research*, 2(3), 1-8.
- Jaafar, H. S., Endut, I. R., Faisal, N. and Omar, E. N. 2011. *Innovation in logistics services—halal logistics*. Paper presented at the Proceedings of the 16th International Symposium on Logistics (ISL).
- Khan, M. J., Abbas, A., Naeem, M., Ayaz, M. M. and Akhter, S. 2013. Current issues and future prospects of dairy sector in Pakistan. *Science, Technology and Development*, 32(2), 126-139.
- Mohamad, N. and Backhouse, C. 2014, January 7-9, 2014. *A framework for the development of Halal food products in Malaysia*. Paper presented at the International Conference on Industrial Engineering and Operations Management, Bali, Indonesia.
- Moiz, J. and Khan, N. A. 2014. Lays: Halal/Haram Crisis. *Research Journal of the Institute of Business Administration Karachi, Pakistan*, 9(1), 110-118.
- Ngah, A. H., Zainuddin, Y. and Thursamy, R. 2014. Adoption of Halal Supply Chain among Malaysian Halal Manufacturers: An Exploratory Study. *Procedia - Social and Behavioral Sciences*, 129, 388-395. doi: <http://dx.doi.org/10.1016/j.sbspro.2014.03.692>
- Peach, C. 1990. The Muslim population of Great Britain. *Ethnic and Racial Studies*, 13(3), 414-419.
- PHDA. 2016. Punjab Halal Development Authority Retrieved 12 March 2016, 2016, from <http://www.phda.com.pk/index.html>
- Pickthall, M. W. 1992. *The Glorious Qur'an: Text and Explanatory Translation*. Tahrike Tarsile Qur'an, Incorporated.
- PNAC. 2016a. Halal Certification Bodies Retrieved 12 March 2016, 2016, from <http://www.pnac.org.pk/index.php?PageId=141>
- PNAC. 2016b. Introduction of PNAC Retrieved 12 March 2016, 2016, from <http://www.pnac.org.pk/index.php?PageId=1>
- Qureshi, S., Jamal, M., Qureshi, M., Rauf, M., Syed, B., Zulfikar, M. and Chand, N. 2012. A review of Halal food with special reference to meat and its trade potential. *Journal of Animal and Plant Sciences*, 22(2 Suppl), 79-83.

- Regenstein, J., Chaudry, M. and Regenstein, C. 2003. The kosher and halal food laws. *Comprehensive reviews in food science and food safety*, 2(3), 111-127.
- Rezai, G., Mohamed, Z. A., Shamsudin, M. N. and Chiew, E. F. C. 2010. Non-Muslims' awareness of Halal principles and related food products in Malaysia. *International Food Research Journal*, 17(3), 667-674.
- Rezai, G., Mohamed, Z. and Nasir Shamsudin, M. 2012. Non-Muslim consumers' understanding of Halal principles in Malaysia. *Journal of Islamic Marketing*, 3(1), 35-46.
- Riaz, M. N. and Chaudry, M. M. 2003. *Halal food production*: CRC Press.
- Salman, F. and Siddiqui, K. A. 2011. An exploratory study for measuring consumers awareness and perceptions towards halal food in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 3(2).
- SESRIC (Producer). 2013, 12 March 2016. The halal food industry in OIC member countries: opportunities and threats. Retrieved from <http://www.sesrtic.org/imgs/news/image/640-presentation-1-aydin.pdf>
- Shafie, S. and Othman, M. N. 2006. *Halal Certification: an international marketing issues and challenges*. Paper presented at the Proceeding at the International IFSAM VIIIth World Congress.
- Shariff, S. M. and Lah, N. A. A. 2014. Halal Certification on Chocolate Products: A Case Study. *Procedia-Social and Behavioral Sciences*, 121, 104-112.
- Talib, A., Ali, M., Anuar, K. and Jamaludin, K. R. 2008. *Quality assurance in halal food manufacturing in Malaysia: A preliminary study*. Paper presented at the International Conference on Mechanical and Manufacturing Engineering (ICME2008), Malaysia.
- Tieman, M. 2011. The application of Halal in supply chain management: in-depth interviews. *Journal of Islamic Marketing*, 2(2), 186-195.
- Tieman, M. 2013. Establishing the principles in halal logistics. *Journal of Emerging Economies and Islamic Research (JEEIR)*, 1(1), 1-13.
- Tieman, M. 2014. Synergy in halal supply chains. *Islam and Civilisational Renewal (ICR)*, 5(3), 454-459.
- Tieman, M., van der Vorst, J. G. and Che Ghazali, M. 2012. Principles in halal supply chain management. *Journal of Islamic Marketing*, 3(3), 217-243.
- Van der Hoek, W., Hassan, M. U., Ensink, J. H., Feenstra, S., Raschid-Sally, L., Munir, S., Matsuno, Y. 2002. *Urban wastewater: a valuable resource for agriculture: a case study from Haroonabad, Pakistan* (Vol. 63): IWMI.
- Yusoff, F. A. M., Yusof, R. N. R. and Hussin, S. R. 2015. Halal food supply chain knowledge and purchase intention. *International Journal of Economics and Management*, 9, 155-172.
- Zailani, S., Arrifin, Z., Abd Wahid, N., Othman, R. and Fernando, Y. 2010. Halal traceability and halal tracking systems in strengthening halal food supply chains for food industry in Malaysia (a review). *Journal of food Technology*, 8(3), 74-81.
- Zia, R. 2003. Religion and education in Pakistan: an overview. *Prospects*, 33(2), 165-178.
- Zulfakar, M. H., Anuar, M. M. and Ab Talib, M. S. 2014. Conceptual framework on halal food supply chain integrity enhancement. *Procedia-Social and Behavioral Sciences*, 121, 58-67.
