Halal certification, the inadequacy of its adoption, modelling and strategising the efforts

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Abstract

Purpose – Need for effective adoption of halal certification through assessment and accreditation (HCAA) is imperative for the higher level of customer satisfaction. To achieve this, all stakeholders need to be involved in developing the policy. Thus, this study aims to identify barriers to the adoption of HCAA and analyses through structural model of interrelated barriers

Design/methodology/approach – The structural and hierarchical model of barriers to the adoption of HCAA is developed after extensive systematic literature survey along with opinions from various types of experts. Interpretive structural modelling is identified as the appropriate tool in making this model, which is further analysed using MICMAC (*Matriced' Impacts croises-multipication applique' and classment*). Corresponding issues for every barrier as identified may help in further developing the action plan for each stakeholder. Objectives and action plan for various stakeholders were evolved and provided.

Findings – The significant finding indicates to developing a globally accepted halal certifying organisation, as to contain the mislabelling, and this further needs extensive government and customer support. The customer needs to be more aware of the proper idea of halal. Therefore, to succeed, the industry needs to develop a brand identity with a distinct/unique/clear marketing message, not just certifying products/services as halal.

Originality/value – Specific direction for different stakeholders has been derived along with academic finding for researchers and to further develop the action plan.

Keywords Barriers, Halal certification,
Halal Certification through Assessment and Accreditation (HCAA),
Halal Certifying Organizations (HCOs), Integrity, Interpretive Structural Modelling (ISM)

Paper type Research paper

Highlights

- Many times, organisations involved with halal products do not have proper HCAA, and people are critical of the certification.
- With the help of the expert's opinion and extensive literature review, we identified 15 significant barriers responsible for the poor adoption of HCAA.
- A structural and hierarchical model for interrelated barriers in the adoption of HCAA was developed using interpretive structural modelling (ISM) and analysed through MICMAC (*Matriced' Impacts croises-multipication applique' and classment*; cross-impact matrix multiplication applied to classification).
- Findings provide the roadmap for the adoption of HCAA by stakeholders and suggest the need to adopt a globally accepted HCO.
- HCAA seems to be highly significant for satisfaction and delight of consumers.

1. Introduction

Intense IT-enabled globalisation with higher disposable income and better educational level has transformed the global market. This phenomenon is bringing changes in lifestyle, taste and product preference of the consumers. Thus, consumers around the globe are showing a keen interest for safe, hygienic, natural, nutritious and pure/unadulterated consumables. Here comes the role of reliable certification for these product/services.

The idea of halal, in the context of food, cosmetics, pharmaceuticals and other natural products, manifests that these goods are prepared hygienically with the permissible ingredients and follow the processes as provided by *Shariah* and are safe to consume. Major multinational companies are now assimilating halal principles into their business operations, and this niche market is becoming too big. Deadly disease, such as mad cow disease and the bird flu virus is also awakening customer towards halal (Vermeir and Verbeke, 2006). In 2014, lawsuits were filed by consumers against the pharmaceutical giant Johnson and Johnson whose bestselling talcum powder brand, was alleged for causing ovarian cancer in women (Kirk, 2014). Wilson (2014) suggested that halal can set the agenda of human conscience and accountability.

Thus, modern consumers are becoming more concerned about the safety aspects of the products they use. Halal certification through assessment and accreditation (HCAA) can play a crucial role in providing a much higher level of customer satisfaction. There is some opposition to *halal* labelling on religious and cost grounds, and we need to consider these criticisms in making a better benchmark of *halal* labelling.

1.1 Need for the research

With the advancement of science and technology, the issue of safety and security is becoming complex, and the same applies to consumables specifically food, cosmetics, pharmaceuticals and allied areas of goods and services. Therefore, certification of *halal* products also evolves as a critical issue and needs to be addressed effectively by the fast-moving consumer goods (FMCG) players, restaurants and pharmaceuticals industry as per the Islamic dietary laws (Mohamed Nasir and Pereira, 2008; Bonne and Verbeke, 2008; Khan *et al.*, 2018a).

Due to wholesomeness nature of *halal* consumables, the product and services which possess *halal* logo/certificate are being perceived as a reliable hallmark of hygiene, safety and quality standards in trade dealings with consumers asking for *halal* (Rezai *et al.*, 2012).

Halal processing standards, when compared to traditional safety standards, is typically a quality assurance method that stresses on critical control points safeguarding the processed/unprocessed goods from intoxicants, pathogens, wastes, etc. from farm to forks (Abdul Latiff *et al.*, 2013). The concept of *halal* is becoming important when consumers are concerned about the issues like healthy, pure, natural, organic, safe, sustainable, nutritious, ethical, fair trade and cruelty-free animal welfare aspects of products they consume (Tseng *et al.*, 2016; Mohamed *et al.*, 2013). El-Bassiouny *et al.* (2017) introduces a new concept of sustainability by adopting macro-marketing perspective based on Islamic traditions and suggested that merging the concept of sustainability and Islamic macro-marketing can answer the quest of sustainable development in new world order.

Regenstein *et al.* (2003) mentioned that HCAA is a crucial factor for the products to be traded internationally as this has emerged as an essential condition for trading in many countries. They also explored that there are tremendous opportunities around the globe, compelling the FMCG industry to incorporate *halal* in their conventional business operations. Therefore, to exploit this new type of demand for *halal* certified consumables, many new and existing organisations have entered the business of HCAA.

The criticism of *halal* consumables needs to be undertaken for the satisfaction and delight of the larger customer base. The major criticism arises due to mislabelling/ inadequate labelling because of the lack of globally accepted HCO to regulate the growing *halal* industry. Another criticism also needs to be mentioned that permissible ingredient is not correctly coded which makes the parameter of certification narrower hence consumables need to rely on natural and organic ingredients which are limited in supply chains which add cost to the *halal* consumables and ultimately the *halal* status is compromised (Kati Chitrakorn, 2015). Further, the significant HCOs are not unable to disseminate the information accurately due to which the idea of *halal* in generally misunderstood by the masses. Thus, there is a need to research, the adoption of HCAA, and this can be undertaken, if one understands the barriers and the vulnerable areas for the same, and consequently one needs to develop an action plan necessary for the stakeholders.

1.2 Objectives of the research
The principal objectives of the research undertaken and communicated through this paper is outlined as follows:

- to identify the significant barriers responsible for the poor adoption of HCAA;
- to establish a hierarchical and structural model of the barriers using ISM of these barriers with the help of expert opinions, group discussion, and brainstorming; and
- to analyse the interactions of these barriers using MICMAC and recommend an action plan for various stakeholders of HCAA.

2. Literature review
This section reviewed the relevant literature in halal certification and is divided into three sub-sections. First sub-sections reviewed literature related to the halal and adoption of HCAA, and next subsection gives a brief overview of HCAA from a global perspective. Later, barriers in adopting HCAA is identified and presented in tabular form.

2.1 Halal certification through assessment and accreditation
The process of assessment and accreditation of *halal* manufacturing/service unit not only focuses on the ingredients of the products but also scrutinises every aspect of the associated production and operations systems. The concept of *Toyyib* is essential along with the compliance to *halal*. This attribute of halal is the strength of *halal* certification where sanitation, hygiene, ethical practices and safety is also an essential part of the assessment and accreditation process.

Generally, the term *halal* is mistakenly confined to the domain that the consumables are free from alcohol, contain no pork or its derivatives and the animal is slaughtered ritually. However, the domain of *halal* is much broader; it highlights the purity of products and recommends consumers to consume products closest to their natural state. For people asking for *halal*, this stands for products that are free from intoxicants, pesticides, fertilisers, harmful preservatives, gelatin, waste, antibiotics, banned items and genetically modified products. *Halal* also talks about the pureness in conduct and conscience, demanding consumers to attain good moral values and show ethical choices in routine life. Therefore, *halal* is closely linked with the matters of organic agriculture, fair trade, product safety, ethical business practices, human behaviour with animal and ecological economics. Explicitly, *halal* addresses the issue of sustainability, humane animal husbandry, respect for the environment, cleanliness and corporate social responsibility values.

Halal is becoming a form of product differentiation strategy, and the product/service is different from that offered by other competitors and competing products. Hanzaee and Ramezani (2011) postulated that the *halal* logo is emerging as a global symbol for quality assurance and lifestyle choice. An HCAA of the system is introduced to protect consumers of halal goods and services. A *halal* Certificate/logo is a documentary proof issued by a competent, institutionalised and accountable professional organisation, which recognises that the product and the processes are as per the Islamic dietary guidelines (Guntalee and Unahannda, 2005; Khan *et al.*, 2018d). Wilson and Liu (2010) investigated branding aspects of halal and suggested that potential of halal needs to be harnessed by focussing on its strong ethical standpoints.

Several studies were carried out in the broad area of HCAA, Ab Talib and Ai Chin (2018) empirically studied the reasons and implementation of halal food standards in Malaysian context and examined whether Malaysian firms are instigated by reactive or proactive measures in implementing halal food standards. Alzeer *et al.* (2018) provide a practical overview of halal and Toyyib and their values and relationship to food safety. This study suggests a halal logo/certificate should reflect both halal and Toyyib attributes. Kawata *et al.* (2018) suggested through a choice experiment that halal logo has no impact on non-Muslim subjects' purchasing behaviour. Ahmad *et al.* (2018) reviewed and discussed the halal food control systems in Malaysia by adapting five key elements from the national food control system. This study also points out the challenges faced by the adapted components. Annabi and Ibidapo-Obe (2017) through inductive qualitative and evaluative research method investigated how halal logo assures the quality of cosmetic products in UK. Ab Talib *et al.* (2017) empirically suggested that halal food certificate implementation positively influences business performance. Ab Talib *et al.* (2015) suggested that a lack of uniform halal certification system is a significant problem faced by the halal industry and complicates halal integrity assurance. Abd Rahman *et al.* (2018) through a cross-sectional survey investigated the between perceived benefits, traceability systems and practices and readiness for a halal assurance system (HAS). Zailani *et al.* (2017) suggested that the absence of international halal certification is one of the significant challenges confronted in halal logistics operations. Ali *et al.* (2017b) recognised that embracing halal standards is not sufficient in safeguarding halal food integrity, it requires effort beyond the certification system. Ali *et al.* (2017a) established a conceptual model to suggest the integration of supplier and customer contributes to the superior performance of halal food supply chain. Neio Demirci *et al.* (2016) reviewed the issues mainly related to food safety in halal assurance and explored the criteria that are common in internationally accepted food hygiene standards and halal standards. Ab Talib *et al.* (2016a) established a theoretical relationship between halal certification and logistics performance. Ab Talib *et al.* (2016b) ascertain the motivation to implement halal food certification using the intuitional theory. Ab Talib *et al.* (2015), through Pareto analysis, prioritised the major motivations and limitations in implementing halal food certification. Khan *et al.* (2019) postulated that multiplicity and conflicting halal standards make the halal commodities to get traction in international markets difficult. They suggested and evaluated the initiatives to harmonise halal standards by analysing the cost and benefits of accomplishments. Rios *et al.* (2014) examined through factorial design how consumers perceived the trustworthiness of halal certifications from various Muslim and non-Muslim countries. Prabowo *et al.* (2014) explore various factors using nominal group technique that hamper halal certification in food service industries in Indonesia and suggests that lack of knowledge and awareness is the most critical issue which hinders their effort to practice halal standards.

2.2 Halal certification through assessment and accreditation in global perspective
In late 1970s, Muslim countries started importing consumables from countries, such as Europe, USA, Brazil, Russia and Asian countries. A substantial proportion of the imported consumables contained meat or gelatin from the animal source or any other animal derivatives whose *halal* status is dubious. It resulted in the demand for the establishment of bodies which perform *halal* certification through assessments and accreditation in the exporting countries. Several HCAA bodies emerged in developed countries, Malaysia, Thailand, Indonesia and China. Name of the bodies which need to mentioned here the "Islamic Services of America" and "Islamic Foods and Nutrition Council of America (IFANCA)" in USA, "Jabatan Kemajuan Islam Malaysia (JAKIM)", "Majelis Ulema Indonesia (MUI)", "Islamic Religious Council of Singapore (MUIS)" and "Central Islamic Committee of Thailand" in Southeast Asia, "Jamiat Ulama-i-Hind Halal Trust" in India, "Halal Food Council International" in China, "Australian Federation of Islamic Councils" in Australia and "Federation of the Islamic Association of New Zealand" in New Zealand. Some other HCOs were also instituted in UK, France, Brazil, Germany and The Netherlands. As there are no rules to regulate the establishment of HCOs, the decision to acknowledge halal certified products was left to consumer/consuming countries. The consumer/consuming countries often rejected Certificate/logo of a few bodies because they were not recognised/less known. Table I depicts the glimpse of key halal certifiers by region. It also shows the certifying organisation, their Jurisdiction and compliances undertaken.

2.3 Barriers in adopting halal certification through assessment and accreditation for products and services
After reviewing the available academic literature on food safety, we conclude that a safety norm could be implemented successfully after dealing with the issues that include organisational, managerial and technical aspects. Wherein these barriers to food safety were linked to HCAA also provide hindrance and impede the progress in its adoption and realisation of HCAA as a superior quality assurance system. After analysing a large volume of literature and consulting various stakeholders of HCAA, 15 significant barriers to adoption of HCAA were consolidated. This paper is exclusively dealing with these 15 barriers. Table II shows these significant barriers along with the relevant, important references from the literature.

3. Research methodology
In this study, ISM integrated with MICMAC is justifiably used to investigate the inter-relationship and prominence of identified barriers. Next sub-sections provides a brief overview of ISM methodology and ISM-based model development steps.

3.1 Interpretive structural modelling: an overview
Sushil (2012) reasoned that the ISM is a logical and iterative representation of graph theory technique that deals with the analysis of the embedded object or representation system. Warfield (1974) developed ISM as a research tool and is now established as a well-defined methodology, applied to identify and outline various components categorising a problem. The ISM technique results in a digraph for the complex and ill-defined system from a set of contextual relationships amongst a set of variables. A significant utilisation of ISM is in transforming the poorly defined mental model/perception into a valuable, well-structured and decisive model (Sage, 1977; Khan *et al.*, 2014).

ISM allows a groups opinion to get formulated into a hierarchical structure. It can develop a structure that enacts order and guidance on the complex relationships among a set

Name of the certifying organisation	Compliance processes and systems followed	Jurisdictions
JAKIM	Inspects the whole supply chain of halal consumables including the source of ingredients, processes and logistics aspects Conduct halal training Making mandatory for organisations to activate Internal halal assurance committee	Malaysia
ISNA	Assessment approach is process-oriented Oversee the auditing process of a production line and may withdraw the halal certificate Insists for ISNA trained slaughter men	Canada
Halal Food Council of Europe	Inspects source and type of ingredients and operations of production	Europe
IFANCA	Investigates for the source and type of ingredients and production procedures followed Perform regular audits of facilities Can revoke halal Certificates on non-compliance Permits mechanical slaughtering of poultry in the supervision of IFANCA trained personnel	USA
Jamiat Halal Trust	Mainly certify slaughtering aspects of meat processing industry, Requires JHT authorised halal auditors	India
Pakistan Standards Quality and Control Authority (PSQCA)	They are more into providing certification. However, the importing countries only believe in the JAKIM	Pakistan
MUI	Scrutinises type of ingredients and methods of production Perform audits of production units and may revoke the halal certificate Requires MUI authorised halal inspectors	Indonesia

Source: Adopted and Modified from Izberk-Bilgin and Nakata (2016)

Table I.
Key halal certifying organisations by jurisdiction

of elements by utilising an advanced interactive planning methodology (Sage, 1977). The method is interpretive and iterative, and judgments of a group decide how the elements are related, and this relationship is extracted into a structural model (Sushil, 2012). ISM no doubt is a subjective tool, but the model development depends on the experts'/literature review/maturity and sincerity (Sushil, 2018). Steps involved in making the ISM-based model is as per Sushil (2012, 2016), Jain and Raj (2016), Kumar *et al.* (2013), Haleem *et al.* (2012), Luthra *et al.* (2015) and Khan *et al.* (2014).

3.2 Developing the structural model
The principal objective of this study is to analyse the barriers to adoption of HCAA; here, we are developing a hierarchical model using ISM technique. The input to ISM is expert's opinion and the available literature.

3.2.1 Data collection. A system-based tool requires input from fewer experts who have excellent subject knowledge. The opinion of the experts was obtained to establish the contextual relationship among variables through an idea engineering workshop. A systematic literature review is done to identify the barriers to adopting HCAA. Eight experts having vast experience from industry and academia were participated in this workshop to consolidate the identified variables and to establish the relationships among them. Consultations have taken from the experts working with HCOs, halal exporting

Barrier No.	Barriers	References
B1	Weak enforcement and compliance of *halal* logo and certification mandate	Neio Demirci *et al.* (2016), Sharifah (2013), Talib and Johan (2012) and Srinivasan (2011)
B2	Unresolved food additive issues for *halal* foods, standards and practices by HCOs and lack of clarity in *halal* definition by different *halal* certifying organisations on the aspects of slaughtering and stunning of animals	Al-Mazeedi *et al.* (2013), Batu and Regenstein (2014) and Osman *et al.* (2014)
B3	Lack of innovation, research and development (R&D) and commercialisation in the field of *halal* certification (and assessment) and compliance-related work	Bakar *et al.* (2014), Hassan (2016), Samori and Sabtu (2014) and Majid *et al.* (2015)
B4	Lack of collaborative and professional approach among different *halal* certifying organisations	Aslan and Aslan (2016), Din and Daud (2014), Fischer (2016), Syazwan *et al.* (2013), Haleem and Khan (2017) and Bai and Sarkis (2013)
B5	Paucity of *halal* certifying professionals	Talib and Hamid (2014), Khan and Haleem (2016) and Hashim and Shariff (2016)
B6	Lack of academic and professional program/ Training program/Certification program/ Capacity building of *halal* professionals	Zailani *et al.* (2010), Fischer (2016), Spiegel *et al.* (2012), Prabowo *et al.* (2014) and Grimm *et al.* (2014)
B7	Lack of support from the Government and regulatory bodies and weak enforcement of rules/norms	Prabowo *et al.* (2014), Zailani *et al.* (2015) and Neio Demirci *et al.* (2016)
B8	Inadequate (unified) customer support from *halal* certifying organisations with complicated systems, processes, etc.	Hashim and Musa (2014), Ismaeel and Blaim (2012) and Tama and Voon (2014)
B9	Lack of codification of processes, technology and related issues and their weak compliances	Khan and Haleem (2016), Bonne *et al.* (2007) and Khalid (2016)
B10	Lack of facilities of infrastructure/ cold chain that can be upgraded for *halal* products	Tieman and Che Ghazali (2014), Iberahim *et al.* (2012) and Faisal and Talib (2016)
B11	Lack of institutionalised, professional and universally accepted *halal* certifying organisation	Poniman *et al.* (2015), Marzuki *et al.* (2012), Tieman (2015), Rios *et al.* (2014) and Batu and Regenstein (2014)
B12	Lack of consumer awareness, support, attitude and image development	Aziz and Chok (2013), Alqudsi (2014), Rajagopal *et al.* (2011), Yusuf and Yajid (2016) and Khan *et al.* (2018c)
B13	Higher cost of *halal* implementation and its associated Financial Viability	Maldonado-Siman *et al.* (2014), Karaman *et al.* (2012), Mensah and Julien (2011) and Tunalioglu *et al.* (2012)
B14	Lack of top management support and change management/ Insufficient planning regarding *halal* implementation	Prabowo *et al.* (2014), Manzouri *et al.* (2013), Khan *et al.* (2014), Ali and Suleiman (2016)
B15	Fear of being caught (Reduced product quality and then market access for organisations)	Majid *et al.* (2015), Yusuf (2010), Prabowo *et al.* (2014) and Haleem *et al.* (2019)

Table II.
Barriers in adopting HCAA

companies, academicians of operations management and halal and professional working in the marketing of consumer product. In later stage result obtained were also validated with experts. We have tried to see that the views are balanced, and no un-ethical practices are adopted.

3.2.2 Developing the structural self-interaction matrix (SSIM). An SSIM needs to be developed based on expert's opinion about the conceptual relationship among the identified barriers to the adoption of HCAA. In this study, professionals from the HCOs, *halal* manufacturing industry and academia were consulted for recognising the contextual relationship among the barriers to the adoption of HCAA.

The notations used for representing the type of relationship between a pair of barriers are "V," "A," "X" and "O".

Where:

- V –barrier i will help in achieving barrier j and vice versa is not true;
- A –barrier j will help in achieving barrier i, and vice versa is not true;
- X – barrier i and barrier j will help in achieving each other; and
- O – barrier i and barrier j are not related.

3.2.3 Initial reachability matrix formation. We have used the identified set of rules to convert SSIM into the initial reachability matrix. Thus, an initial reachability matrix for barriers in the adoption of HCAA is developed.

3.2.4 Final reachability matrix formation. We have obtained the final reachability matrix by incorporating the transitivity. Thus, the final reachability matrix has been developed this includes transitivity.

3.2.5 Level partitioning. By examining the final reachability matrix, the reachability set and antecedent set for every barrier have been identified. After that, we have obtained the partitioning of the barrier in adopting HCAA using the procedure as given by Sushil (2017a, 2017b). The barrier for which intersection set and reachability set are identical is placed at the top-level position in the ISM hierarchy. We observe that barriers B1, B2, and B15 are at Level 1 (i.e. top level). Similarly, after stepwise iteration, we obtain the levels contributing to the development of the final model.

3.2.6 Formation of interpretive structural modelling-based model. Initially, from the final reachability matrix, a diagraph is developed. Then transitivity links are eliminated, and nodes are replaced by corresponding barrier number which results in ISM model (Figure 1). ISM model is structured and shows the hierarchy of barriers for adopting halal along with relationship among these barriers.

As observed from the Figure 1, lack of consumer awareness, attitude and image and development, lack of support from the government and regulatory bodies, lack of institutionalised, professional and universally accepted HCO/standards and lack of top management commitment seem to be significant barriers to the adoption of HCAA as they form the base of the ISM hierarchy.

Results indicate that lack of academic and professional program/training program/ certification program/capacity building of halal professionals, lack of collaborative and professional approach among different HCOs and inadequate (unified) customer support from halal certifying organisations with complicated systems, processes etc. may be caused by lack of institutionalised, professional and universally accepted HCO and lack of top management support for the adoption of HCAA.

These barriers further lead to paucity of *halal* certifying professionals, lack of codification of processes, technology and related issues and their weak compliances and lack of innovation, research and development (R&D) and commercialisation in the field of *halal* certification (and assessment) and compliance-related work.
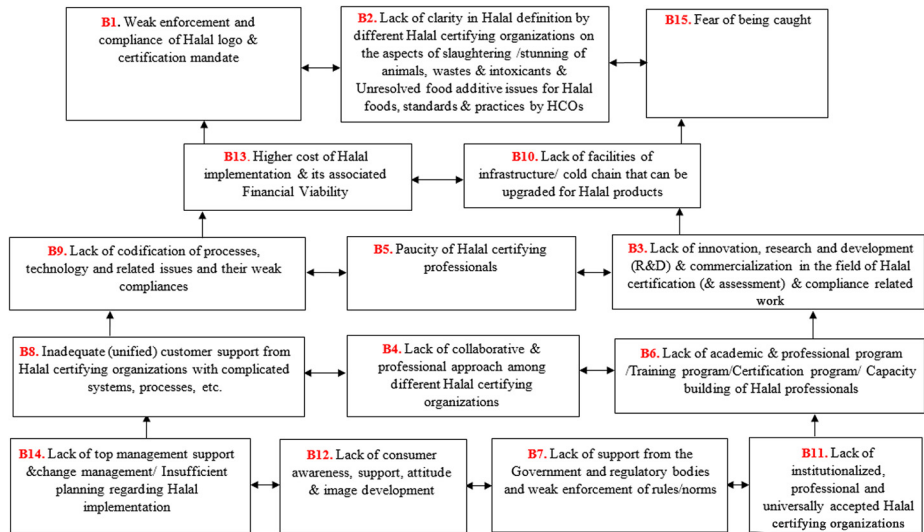
Higher cost of *halal* implementation and its associated Financial viability and lack of facilities of infrastructure/cold chain that can be upgraded for *halal* products may be the outcome of scarce *halal* certifying professionals and lack of R&D work in HCAA.

Barriers such as fear of being caught, weak enforcement and compliance of *halal* logo and certification mandate and unresolved food additive issues for *halal* foods, standards and practices by HCOs are placed at the top level of the model. These barriers show the least impact on the adoption of HCAA.

4. Matriced' impacts croises-multipication applique' and classment cross-impact matrix multiplication (MICMAC) applied to classification analysis

In this section, we have undertaken a MICMAC analysis of the 15 barriers of which the ISM model is developed. The MICMAC analysis is done to find out the degree of driving and dependence power of the identified barriers in a given system. In MICMAC analysis, the dependence power mapped on the abscissa and driving power on the ordinate in a two-dimensional rectangular plane (Figure 2). The driving power of a barrier is the measure of its domination power on the other barriers. Similarly, the dependence power measure domination of the other barriers on the specific barrier. Here, the sum of 1s in the row for all the corresponding barriers gives the driving power. Similarly, the sum of 1s in the columns provides dependence power. Further, this analysis segregated the barriers into four distinct quadrants/clusters and interpreted in the upcoming sub-sections is discussed.

4.1 Autonomous or excluded variables

Autonomous variables are those variables which have a low level of dependence and low level of driving power; generally, they are shown in the cluster of the excluded variable (Cluster I). The variables in this cluster are insignificant and relatively less connected to the system. In this case, no such variables fall into this category. It also shows that model so developed has been built with correct variables.
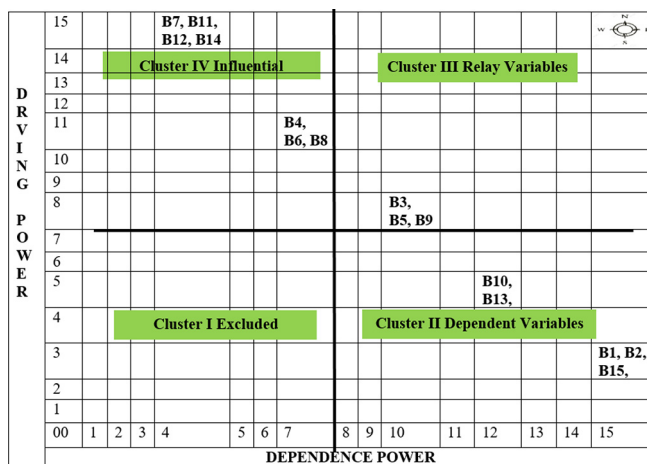
DRIVING POWER															
15			B7, B11, B12, B14												
14	Cluster IV Influential					Cluster III Relay Variables									
13															
12															
11				B4, B6, B8											
10															
9															
8							B3, B5, B9								
7															
6															
5								B10, B13,							
4	Cluster I Excluded					Cluster II Dependent Variables									
3															B1, B2, B15,
2															
1															
00	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

DEPENDENCE POWER

Figure 2.
Driving and
dependence graph in
the adoption of
HCAA

4.2 Dependent variables

Dependent variables cluster is in the southeast part of the MICMAC diagram (Cluster II). They are especially sensitive to the evolution of influent variables and relay variables. They are the output of the system. Barriers such as higher cost of *halal* implementation and its associated financial viability, lack of facilities of infrastructure/cold chain that can be upgraded for *halal* products, weak enforcement and compliance of *halal* logo and certification mandate, unresolved food additive issues for *halal* foods, standards and practices by HCOs and fear of being caught fall into this cluster.

4.3 Relay variables

Cluster III of MICMAC diagram is of relay variables. They are also called as Stake variables because they represent a high level of driving power and high level of dependence. The variables in this cluster can influence other variables and can be influenced too. Barriers such as lack of codification of processes, technology and related issues and their weak compliances, paucity of *halal* certifying professionals and lack of innovation, research and development (R&D) and commercialisation in the field of *halal* certification (and assessment) and compliance-related work fall in this cluster.

4.4 Influential/determinant variables quadrant

Cluster IV shows the influential variables. These barriers have high driving power and low dependence power. Influent variables act on the systems as a key force of inertia or movement. They are considered as entry variables and are often called environmental variables. Thus, they strongly condition the system. In this case, "lack of top management support and change management/insufficient planning regarding halal implementation", "lack of consumer awareness, support, attitude and image development", "lack of support from the government and regulatory bodies and weak enforcement of rules/norms", "lack of institutionalised, professional and universally accepted halal certifying organisation", "inadequate (unified) customer support from halal certifying organisations with complicated systems, processes etc.", "lack of collaborative and professional approach among different halal certifying organisations" and "lack of academic and professional program/training

program/certification program/capacity building of halal professionals" are categorised as influential/determinant variables.

5. Findings and discussion

To certify a product as halal, it requires finding out the source of raw material used, its type, the method of acquisition of raw material, method of processing; it's transportation, handling, and storage (Riaz and Chaudry, 2004; Tieman *et al.*, 2012). The notion of HAS is somewhat new for the managers working in the field of FMCG, and it necessitates a long-time frame to integrate this concept into the existing/conventional operations of any manufacturing system.

Lack of knowledge and awareness about HCAA and attitude towards *halal* certified products are the most important barrier which hinders the integration of *halal* certification in the modern business model of major FMCG player. A study by Aris *et al.* (2012), validate this fact people who are rather well-informed and cultured do not understand the specific concepts of halal and paradigm of Toyyiab.

Also, major research in this area interpret halal-labelled products as those that comply to the *Shariah* requirement, and this is the religious compulsion for Muslims. This preconceived notion hinders the growth of halal product in multi-religious society. However, many recent literatures such Ali *et al.* (2017a, 2017b), Khan *et al.* (2018a) and Neio Demirci *et al.* (2016) tried to portray halal as a broad-based universal mandate; whose essence lies in safe and wholesome consumption.

The lack of socialisation and dissemination of information regarding HCAA worsened the attitude of consumers and manufacturers towards *halal* products. Wan-Hassan and Awang (2009) mentioned that the corporates show less interest towards *halal* certification because of the dearth of relevant information about the HCAA. Aris *et al.* (2012) and Marzuki *et al.* (2012) highlighted that consumers of *halal* products and services do not have sound knowledge of *halal* and haram.

Lack of commitment from senior management and lack of motivation from employee side are other significant barriers to the adoption of *halal* certification (Prabowo *et al.*, 2014). Another reason that top management shows the lack of commitment towards HCAA is due to lack of time to figure out the new standards, compiling and executing them and conducting a training program for their employees to prepare them to tackle new dimension of the market. To develop new skills, the workers also need time.

Most of the workforce who are directly engaged in *the halal* industry are not familiar with the *halal complying* processes that make goods and provide services. Further, they are also not aware of the ingredients/raw materials that are forbidden. They are graduates or diploma holders with the heavy workload, and the syllabus/curriculum they had learned in the university are more directed towards flavour, style and aesthetic but nothing about *halal* matters (Prabowo *et al.*, 2014). Moreover, rarely any training program is conducted related explicitly to *halal* so to make them more familiar with the concept of *halal*.

Very less amount of information regarding the requirements and procedures of *halal* certification is available. Industries get information only through certifying bodies' websites or any event held by them. The program to propagate halal certification is limited may because of the weak financial support (Prabowo *et al.*, 2014). The results are that many major industry players and consumer focus group do not know about the institutionalised/professional organisations that perform certification of *halal* products.

Lack of support from the government and regulatory bodies is also a major barrier to the adoption of *halal* certification. Lack of policy-making and weak enforcement by regulatory bodies aggravate the situation.

Tieman *et al*. (2012) advocates for a broader approach which also includes ethics in trading, respect for human values and concern for sustainability, thus making the *halal* certification difficult, complicated and unclear. The absence of the crucial role of government in HCAA has adversely affected its adoption (Khan *et al.*, 2018b; Poniman *et al.*, 2015). HAS is comparatively new, and it demands new guidelines and framework parallel to the conventional management system.

Some causes of industries' low interest in HCAA that need to be mentioned are outdated and ill-defined governmental regulations, weak monitoring of regulatory bodies, widespread corruption and lack of enforcement of the law. Wahid (2012) and Soesilowati (2010) also acknowledged that the government's insensitiveness towards *halal* products has resulted in the HCAA to be trivial, therefore, we need a strong HAS for *halal* products and services and effective compliance for making it stronger.

6. Major contribution
This research consolidated 15 significant barriers to the adoption of HCAA and developed a structural and hierarchical model for barriers in the adoption of HCAA. The major contribution of this research is to categorise stakeholders involved according to their role, and their objectives with action points in hierarchical order. The action points are to act as a roadmap for the adoption of HCAA. Findings are to help mitigating the challenges faced by stakeholders involved in accreditation and certification of halal.

6.1 Action plan for stakeholders
We have classified the stakeholders into four major categories, namely, government, HCOs, industry and consumers/focus groups. Further, related issues for these barriers have been identified and provided through Table III. It can be possible that identified issues are similar for two or more stakeholders. Through Figure 3, the objectives and associated action plan for each type of stakeholder are being presented to help policy planners, industry and the consumers in effective adoption of HCAA. The identified objectives and associated action plan is to help providing a better-quality product with higher customer satisfaction and delight.

7. Conclusions, limitations and future scope of the study
HCAA seems to be a basic but highly significant towards satisfaction and delight of consumers. The research identifies significant barriers which impede the adoption of HCAA, using qualitative tools. Experts have considered the significant positive and negative factors of not adopting *halal*. Analysed the structural model of the barriers developed through MICMAC. The research identifies the critical action plan for four types of major stakeholders.

This research identifies barriers using available literature and experts' views, however with less literature availability in HCAA, and the orientation of experts, there is scope of biasness. An empirical study could have been taken to decide the hierarchy of the identified barriers but getting appropriate respondents in this area is a more significant challenge.
Many times, companies involved with *halal* products/services do not want to share the processes adopted and the logic behind not adopting the *halal* logo/certificate. The ingredient is a big issue which most of the companies do not want to disclose. The need is to undertake comprehensive research with much more open mind and process based orientation, for achieving a higher level of customer satisfaction and delight as to develop a value chain for halal products supported through a globally accepted coded *halal*.

| S No | Barriers to adopting and socialising halal Certificate/logo | Issues to be taken up by different stakeholders | | | |
		Government	Halal Certifying Organisations	Industry	Consumers/Pressure groups
B1	Weak enforcement and compliance of halal logo and certification mandate	Providing more power to HCOs	Strict compliance with Standards	Ethical business model	Customer Focus Group should be involved in compliance and complaint to Government
B2	Unresolved food additive issues for halal foods, standards and practices by HCOs and lack of clarity in halal definition by different halal certifying organisations on the aspects of slaughtering and stunning of animals	Providing R&D Support	Develop Standards and Practices	Develop Standards and Practices	To bring into notice any malpractice
B3	Lack of innovation, research and development (R&D) and commercialisation in the field of halal certification (and assessment) and compliance-related work	Research and Development (R&D) and Innovation	Research and Development (R&D) and Innovation	Commercialisation	Undertake independent R&D
B4	Lack of collaborative and professional approach among different halal certifying organisations		Collaborative and Professional Approach		
B5	Paucity of halal certifying professionals	Supporting curriculum development and training to professionals	Developing curriculum to train Professionals	Developing curriculum to train Professionals	Help in developing curriculum to train Professionals and to consumer focus group
B6	Lack of academic and professional program/ Training program/Certification program/ Capacity building of halal professionals		Academic and Professional Program for capacity building	Academic and Professional Program for capacity building	
B7	Lack of support from the Government and regulatory bodies and weak enforcement of rules/norms	Enforcement of HCAA by Setting up regulatory bodies		Pressurising Government for providing safer consumables	
B8	Inadequate (unified) customer support from halal certifying organisations with complicated systems, processes, etc.	Customer Support	Customer Support	Transparent Trading	Support and Complaint system

(continued)

Table III.
Barriers in adopting halal certification through assessment and accreditation and the corresponding issues of various stakeholders

| S No | Barriers to adopting and socialising *halal* Certificate/logo | Issues to be taken up by different stakeholders | | | |
		Government	Halal Certifying Organisations	Industry	Consumers/Pressure groups
B9	Lack of codification of processes, technology and related issues and their weak compliances	*Proper Codification of Processes/ Technologies/ Ingredients*	*Proper Codification of Processes/ Technology/ Ingredients*	*Compliances*	
B10	Lack of facilities of infrastructure/ cold chain that can be further upgraded for *halal* products	*Assistance in developing infrastructure*	*Proper norms for cold chain*	*Halal designing of plant/ equipment*	
B11	Lack of institutionalised, professional and universally accepted HCO	*Develop such bodies*	*Functioning to be made professionals*		
B12	Lack of consumer awareness, support, attitude and image development	*Awareness program to change the attitude of halal consumers*	*Awareness program to change the attitude of halal consumers*	*Awareness program to change the attitude of halal Consumers*	*Pressure Group to aware consumers about HCAA*
B13	Higher cost of *halal* implementation and its associated Financial Viability	*Providing subsidies*	*Develop an empirical relationship to optimise the cost of adopting HCAA*		
B14	Lack of top management support and change management/ Insufficient planning regarding *halal* implementation	*Bring legislation*	*Program to disseminate adoption of HCAA*		*Consumer demand can change management perception towards HCAA*
B15	Fear of being caught	*Government support help for new entrants*	*Develop standards that can be easily adopted*	*Consider best practices of other complying industries*	

Table III.
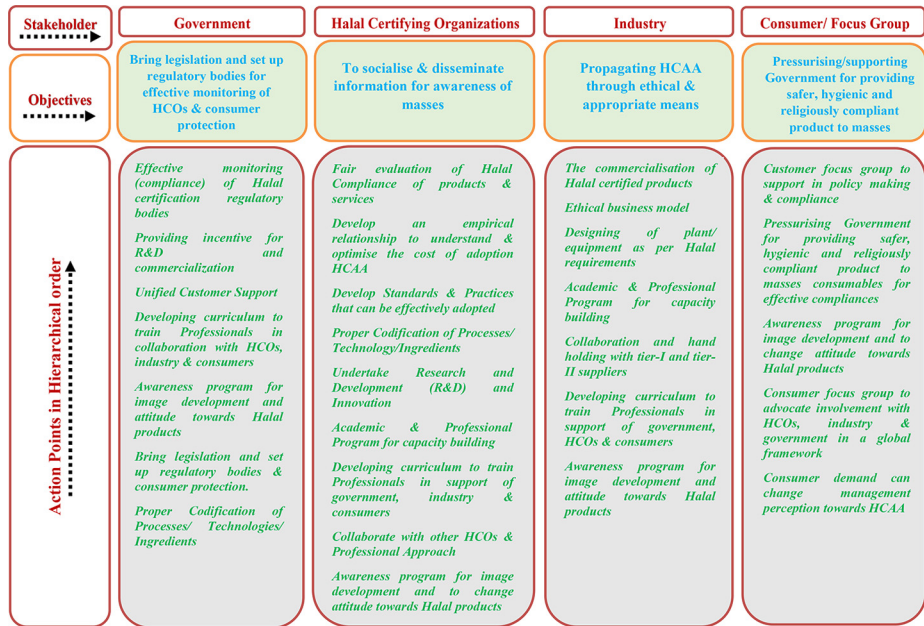
Figure 3.
Stakeholder-wise objectives and associated action plan for the adoption of HCAA

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