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An Insight into Halal Business and Lifestyle

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The halal economy is a trillion-dollar industry. The growth of the halal economy and the spread of halal activities and lifestyle have created a high demand for halal professionals and talent

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An Insight Into Halal Business

The halal economy is a trillion-dollar industry. The growth of the halal economy and the spread of halal activities and lifestyle have created a high demand for halal professionals and talent

Author's Biography

Aisah Bella-Salsa is currently a doctoral candidate at the International Institute for Halal Research and Training (INHART), International Islamic University Malaysia (IIUM). Alongside



her candidature, she is a Research Assistant at The Australian National University under the School of Culture, History, and Language assisting in the research of the Development

of the Halal Industry in Malaysia and Indonesia. Her educational background includes a Bachelor in Arts (Honours) in Media Studies and a Masters in Marketing Management, both from the University of Derby in the

United Kingdom. Her research interests are branding, strategy, marketing, entrepreneurship, consumer behaviour, social anthropology, holistic wellness, and the halal industry. Bella has conducted research on topics

such as Coffee Culture, Personality Traits and Behaviour, Halal Lifestyle Entrepreneurship, and Muslim-Friendly Tourism. She has more than 7 years of professional experience in communications, marketing, mar-

ket research, procurement, and social media spread across four different countries. Bella's current work focuses on bridging her professional experience with her academic interests through a holistic approach.

Amal A. M. Elgharbawy is an Assistant Professor at the International Institute for Halal Research and Training (INHART), specialising in halal science and technology. She holds a PhD in Engineering from the International



she Islamic University Malaysia (IIUM), with expertise in bioprocessing engineering. With a Master's degree in Biotechnology Engineering and a B.Sc. (Hons.) from King Abdul Aziz University, she has excelled academically.

Her research interests encompass various areas within halal science and technology, including ionic liquids and deep eutectic solvents, enzymology, fermentation technology, and nanomaterials. She has published extensively, presented at prestigious conferences,

and contributed to book chapters on ionic liquids, enzymology, and nanomaterials. She actively serves as a reviewer for conferences and journals, and she is a member of professional organizations such as the Malaysian Society of Bioinformatics and Computational Biology

and the Royal Society of Chemistry. She has been invited as a Visiting Professor at several universities and has made significant contributions to the development of the Online Halalpreneurship Training programme and co-authored the Halalpreneurship

book. Recognized as a Professional Technologist, Dr. Amal's dedication to advancing knowledge in halal science and technology, particularly in green solvent applications, establishes her as a respected scholar and influential figure in the field.

Anis Najiha Ahmad is an Assistant Professor at the International Institute of Halal Research and Training (INHART), International Islamic University Malaysia (IIUM). She graduated from Universiti Sains Malaysia in 2008, where she earned a Bachelor of



Science in Food Technology, followed by a Master of Science in Food Technology in 2012. Her master's thesis on "Development of chromatography methods for the determination of ethanol halal limits in selected foods and drinks" highlighted her expertise

in the development of routine methods for ethanol quantification and alcohol limit determination in halal certification. During her doctoral studies, she shifted her focus from hard-analytical detection to a soft management approach in addressing challenges to ensure the halal and whole-

some state of food production. Her PhD thesis specifically developed an instrument that assesses the enablers that lead to the effectiveness of halal food management systems in small and medium-sized enterprises (SMEs). She is well-versed in various fields, including halal food qual-

ity and safety management, halal consumer behaviour, whistleblowing, and core competencies in the halal industry. Through her extensive research, she has authored multiple journal articles and presented her research outputs at different international conferences. Moreover, she

actively contributes to academia both as an editorial member and a reviewer for various peer-reviewed journals. She is also a certified Professional Junior Trainer for Atlas.ti, a well-known computer-assisted qualitative data analysis software (CAQDAS).

Azura Amid is currently a Professor and Dean at the International Institute for Halal Research and Training (INHART) and a Professional Technologist (Ts.), awarded by the Malaysia Board of Technologies. She served in the Department of Biotechnology Engineering,



Kulliyyah of Engineering, International Islamic University Malaysia (IIUM) from April 2001 before her transfer to INHART in 2018. She specialises in cell and molecular biology, genetic engineering, genomics and functional genomics, research methodology, protein and bio-

process engineering, integrated and sustainable agriculture, as well as halal science and toyyib lifestyle. She graduated with a Bachelor of Science with Education (1st Class Hons.) in Biology with a minor in Mathematics (1996), and a M.Sc. in Plant Molecular Biology (2001), both from University of Malaya, and a Ph.D.

in Plant Molecular Biology from the School of Biological Science, Royal Holloway-University of London in 2004. Azura has secured grants worth more than RM3 million from government agencies and industries, and has successfully commercialized several research intellectual properties (IPs). She has written

more than 90 journal articles, several books, and numerous book chapters. Azura is also active in community engagement and knowledge transfer projects related to halal and toyyib lifestyles. She serves as the executive editor of Halalsphere Journal and holds editorial positions in various local and international

peer-reviewed journals. She is a proud member of the Royal Society of Biology, London and an expert panel member in several national and international committees, including the Asian Federation of Biotechnology committee, and the national grant review committee.

Baiduri Zaiyyanna Farudz is a master's student in Halal Industry Management at the International Institute for Halal Research and Training (INHART), International Islamic University Malaysia,



IIUM. She graduated with a bachelor's degree in tourism planning and hospitality management from IIUM in 2021. Her previous degree research was on traditional food, mainly to explore

Rendang as a potential local food heritage product for tourism in Negeri Sembilan. Her current master's degree focused on the modest fashion sector in the halal industry, namely non-Muslim purchase intentions for modest

fashion products in Malaysia. She was first appointed as a graduate research assistant with Kulliyyah of Languages and Management, IIUM, in 2021 under the Jamallail Research Grant Scheme project entitled The Examination

of Perception and Association of Authentic Local Food in Perlis among Tourists and the People of Perlis for the Purpose of Food Destination Marketing." Currently, she is a research assistant under the JAKIM-funded pro-

ject on the study of demand for international halal talents. She also contributed to the research areas of traditional food, halal, and modest fashion through book chapters, journal articles, and presentations at conferences.

Author's Biography

Betania Kartika is currently an Associate Professor at the International Institute for Halal Research and Training (INHART), International Islamic University Malaysia (IIUM). Her educational background includes a Bachelor in Usuluddin (Hons.) from the International Islamic



University in Islamabad, Pakistan, an M. A. in Tafsir Hadith from the same institution, obtained in 1996, and a PhD in Qur'an Sunnah from the University of Malaya, Malaysia (2013). She has more than 25 years of teaching experience at all academic levels, from primary

to university, and 7 years of research expertise in several areas. Her research and publications are focused on Tafsir Hadith related topics, Shari'ah Issues in the Halal Industry, Muslim Friendly Tourism, Shari'ah Compliance Services in Hospitals, Railways, Airlines, and Transportation, Fundamental and Determina-

tion of Halal Haram Products, Integration of Fiqh and Science, Fiqh Consumerism, and Fiqh al-Jallalah. With regard to halal training, she has a variety of halal industry experiences. Additionally, she has spoken about halal and topics related to it at conferences both locally and abroad. Betania used to work on developing

halal modules; and now she serves on the editorial boards of several international, indexed journals and was appointed to the Shari'ah board for Taiwan's Halal certification body. In her seven years with INHART, Betania has held a number of positions, including those of Deputy Director of Academic and Train-

ing, Head of Academic and Student Affairs, Head of Halal Awareness, Information and Outreach, Associate Dean for Training and Industrial Linkages, and Coordinator for Training.

Farahidah Mohamed is currently an Associate Professor at the Kulliyyah of Pharmacy. She obtained her BSc. in Pharmacy from Strathclyde University in 1999 and subsequently worked in community pharmacies and government hospitals before deciding



to pursue a PhD in 2004. She successfully completed her PhD from Strathclyde Institute of Pharmacy and Biomedical Sciences in Scotland in 2008. As a Principal Investigator, Farahidah has secured research grants totalling RM 2.4 million for

nine research projects. She has also received industrial grants to coordinate Good Manufacturing Practice-associated training. Her current focus lies in the design of various dosage forms that combine contemporary medicine with prophetic, natural, or traditional products. The aim of her

research is to create synergistic effects, reduce toxicity, improve treatment compliance, and decrease overall treatment costs. Farahidah has successfully commercialized five halal-certified healthcare and pharmaceutical products, with a cumulative revenue of about RM 6 million. Her

contributions to the field have earned her numerous awards, notably the prestigious Gold Award at the Malaysia Technology Expo and a Special Award from ISPE (Malaysia Chapter) for her innovation in developing a greener pharmaceutical product, specifically paracetamol-hon-

ey. In 2022, she expanded her technopreneurial endeavours by launching a herbal coffee product called "STeKO," aimed at promoting weight loss. Additionally, she is a founder of "ObiReverse," a Community Engagement Program advocating for the belief that obesity can be reversed.

Hamzah Mohd. Salleh started his tertiary education at the Department of Chemistry, University of Waterloo, Canada in 1982. He completed his bachelor, master and doctoral degrees at the same Department/University in 1986, 1989 and 1994, respectively. Upon submis-



sion of his doctoral thesis, he spent 15 months as a post-doctoral fellow at the College of Pharmacy, University of Michigan, Ann Arbor, USA. His interest in enzymology started in the final year project at Waterloo and this is his main research interest to the present day, to-

gether with other new areas of interests: utilisation of biomass and agro-residues; halal industry science; plant-based natural products; teaching/learning natural science from the Qur'anic worldview. Hamzah is one of the pioneers at IIUM who started the Biotechnology Engineering programme in 2000/2001 and he

was the founding director of the International Institute for Halal Research and Training (INHART) – a centre of excellence at the university level, in 2011. Hamzah also contributed to the development of biotechnology in Malaysia by making himself available as a resource person for vetting research proposals

at the university level as well as for the industrial and environmental biotechnology focus area at the Ministry of Science, Technology and Innovation (MOSTI), Malaysia until 2017. In January 2018 Hamzah made a permanent move from the Department of Biotechnology Engineering, IIUM to the International In-

stitute for Halal Research and Training (INHART), IIUM where he served as the Dean until his mandatory retirement in Feb-2023. He currently is a professor of halal science and science at the Halalan Thayyiban Research Centre, Sultan Sharif Ali Islamic University, Brunei Darussalam.

Haruna Babatunde Jayeoba is an Assistant Professor at the International Institute for Halal Research and Training (INHART), International Islamic Uni-



versity Malaysia (IIUM). He obtained a Ph.D in Business Administration from the International Islamic University Malaysia (IIUM). He holds a master's de-

gree in Islamic Banking and Finance from IIUM, as well as a master's degree in Finance and Business Administration from Sultan Abdul Halim Mu'adzam Shah International Islamic Uni-

versity (UNISHAMS). He has a multidisciplinary background with research interests in halal industry, Islamic finance, halal entrepreneurship, sustainability practices, halal entrepreneur-

ship, employee engagement, business management, modern and behavioural finance, capital market, etc. He has been involved in prominent consultancy projects and conducted

several trainings. He is an active researcher with several indexed and non-indexed publications in his areas of expertise.

Irshad A Cader is a Business & Management professional with vast experience in leading and managing internationally reputed businesses and organisations. He holds a master's degree in management from one of the most renowned universities in Australia and a post-graduate degree in Human Resources Development.



He is also a Graduate of the Chartered Institute of Marketing (UK). Currently, he is pursuing his Ph.D. in the Halal industry at INHART, IIUM Malaysia. He has extensive work experience in Business Management, Marketing, Entrepreneurship Development, Human Resources, and Capacity Development functions in various

fields across Australia, Southeast Asia, and the Middle Eastern region. He has successfully led corporate business entities by providing leadership, transforming organisational culture, building staff capacity, and implementing key performance indicators (KPIs) across a group of companies. He has also worked as a consultant for numerous private and non-profit organisations. One

of his notable achievements includes introducing the Duty-Free concept for the first time at all International Airports in the Kingdom of Saudi Arabia, known as "Saudi Duty-Free." Additionally, he played a crucial role in developing a high-end halal cosmetic brand called "Sensi" in Saudi Arabia. Apart from his professional accomplishments, he has extensive experience in teaching, corporate

training, and coaching in the fields of Business Management, Marketing Management, and Human Resources Development. He has taught at state-owned universities and private educational institutions. Additionally, he has actively participated in international conferences and seminars, including the World Halal Summit, the OIC-Asia Africa Trade and Economic Forum, Halal

Expo Australia, and the Indonesia International Halal Lifestyle Conference, where he served as a guest speaker. His research papers have been published in renowned World Halal Summit journals. Throughout his career, he has received several international awards in both the private and government sectors for his outstanding contributions and achievements.

Author's Biography

Irwandi Jaswir was awarded the 2018 King Faisal International Prize laureate in Service to Islam presented by the King Faisal Foundation. He is a well-known "Halal" Scientist who has contributed to the betterment of Muslim Ummah



and has untiringly serves Islam for several years through his continuous scientific research works on halal-related issues. He believes in "giving back" to the Muslim Community by publishing all his research works

in journals, books and chapters in books; offers training in halal-related disciplines; involves in education and contributing to the community services. He acknowledges the importance of embracing this new discipline called "Halal Science" with em-

phasis on the understanding that halal materials are alternatives to non-halal materials and ingredients; halal authentications; development of rapid method for non-halal contamination; halal food and cosmetics and the development of halal standards.

To date, Irwandi has published more than 180 scientific papers in reputable international journals; contributed to 35 book-chapters; presented more than 250 research papers in international conferences - including keynote address and invited lectures; and

written more than 30 non-refereed and mass-media scientific articles. Additionally, his dedication to research has enabled him to file 6 patents under his name and bagging more than 60 scientific awards which are recognised both locally and internationally.

Jamalludin Ab Rahman is a medical doctor graduated from Universiti Kebangsaan Malaysia in 1995. He obtained his four-year Master of Public Health specialist programme, sub specialising in Epidemiology and Biostatistics in



2002 with a thesis entitled "Survival analysis of tuberculosis patients in Terengganu". He was the consultant in Research Methodology and Biostatistics Clinic at Clinical Research Centre, Hospital Kuala Lumpur from

2008-2010. He was actively involved in many national-based surveys in the country which includes National Health and Morbidity Survey (NHMS) 2006 and 2011, National Oral Health Survey for Adults (NOHSA) 2010, National Oral Health Survey for Pre-school

Children (NOHPS) 2015 and National E-cigarettes Survey (NECS) in 2016. He was conferred a fellowship by the Malaysian Public Health Physician Association in 2017. He published a book entitled Brief Guidelines for Methods and Statistics in Medical Research

in 2015 and contributed to many book chapters to various publications. He had published more 90 journal papers with more than 800 citations. He was a member of the COVID-19 Epidemiological Analysis and Strategies (CEASE) Task Force under MOSTI during

the pandemic. He has been active in conducting training on Biostatistics and Research Methodology since 1996. He is the Vice President of Malaysia's Public Health Physician Association and the Dean of Kulliyah of Medicine, IUM.

Khairusy Syakirin Hashim is currently a lecturer at the Department of Quantity Surveying, Kulliyah of Architecture and Environmental Design (KAED), International Islamic University Malaysia. He



graduated with Diploma in Information Technology, Diploma in Quantity Surveying, Bachelor Degree in Quantity Surveying, Master in Asset and Facilities Management, and completed his Ph.D study in Facilities Man-

agement with the research focus in Waste Management. He was previously attached to INHART as the Head of Consultancy from 2015-2021. Besides teaching in the Department of Quantity Surveying, he also teaches at the Department of Tourism Plan-

ning and Hospitality Management, Kulliyah of Language and Management IUM in Pagoh. He is actively involved in research activities covering various areas: Muslim Friendly Tourism, waste management, facilities management, carbon management

and reading management. One of his inventions was developing the Muslim Friendly Hotel Rating System (MFHRS) and has been used by 21 hotels in Malaysia, Korea and Taiwan. He is also an active trainer on Muslim Friendly Tourism for OIC coun-

tries. His involvement with CIDB and JKR in carbon management (MyCREST) has given big impact to the development of Carbon Rating Tools System which has been implemented by the government.

Md. Siddique E Azam is a Ph.D candidate and an independent researcher at the International Institute for Halal Research and Training (INHART), IUM. He completed his MBA in January 2018 at IUM. Prior



to that, he pursued an M.Sc. in Agriculture Education at SAU, Dhaka; a bachelor's degree in agriculture science from HSTU, Bangladesh; and held a position at a public bank for more than four years. Through-

out his academic career, he has been actively engaged in research and scholarly activities, including publishing articles and book chapters and presenting at international conferences. He has experience in teaching and is actively involved in education-

al clubs and societies as well as community service. His research has been read by about 35,000 readers on ResearchGate, a leading academic social networking site. He was awarded the Sejahtera Scholarship at IUM, won the 3-minute thesis (3MT) com-

petition at the faculty level, and presented the excellent paper award at the 181st IRES International Conference, Auckland, New Zealand. He is one of the co-authors of a textbook entitled "Halal Entrepreneurship." He emphasises that Muslim en-

trepreneurs should receive action-civics education, which will provide them with the knowledge and skills to develop the economy as practising Muslims.

Miszairi Sitoris is currently an Associate Professor at the Department of Fiqh and Usul Al-Fiqh at the AbdulHamid AbuSulayman Kulliyah of Islamic Revealed Knowledge and Human Sciences (AHAS-KIRKHS), International Islamic University Malaysia (IUM). Since



1st July 2021, he serves as a Deputy Mufti for the State of Selangor based on a secondment basis. Miszairi graduated with a degree in Fiqh and Usul Al-Fiqh (1996) and a second bachelor's degree in psychology (1997) from IUM. He then pursued his master's degree

and Ph.D. in Fiqh and Usul Al-Fiqh at the same university, graduating in 2002 and 2008 respectively. He also holds a Postgraduate Diploma in Law and Administration of Islamic Judiciary (DAIJ) (2010) from Harun M. Hashim Law Centre, IUM. He served as an Academic Advisor, Department of Fiqh and

Usul Al-Fiqh in 2009, and then as the Coordinator of Student Affairs (IRK Division) in 2010, Covering Deputy Dean (Student Affairs) in 2011 before being appointed as the Deputy Dean Student Affairs in the AHAS-KIRKHS until 2014. In 2019 he was appointed as the Coordinator for Bachelor in Halal

Industry Management (BAHIM) programme. In 2020, he served as the Head Department of Fiqh and Usul Al-Fiqh. His area of research interest includes Religious Studies, Islamic Family Law and Islamic Banking and Finance. He was a member of the Shari'ah Committee of Bank Pambangu-

nan Malaysia Berhad (BPMB) from 1st October 2008 until 31st March 2021, and currently a Shari'ah Committee member of KAF Investment Band Berhad since April 2021. He is also a member of Association of Shari'ah Advisors in Islamic Finance (ASAS) since 2015.

Author's Biography

Mohamad Haniki Nik Mohamed has a bachelor's in pharmacy (Hons.) from Universiti Sains Malaysia (1993), Doctor of Pharmacy (PharmD) in Clinical Pharmacy (1996) and Postdoctoral Fellowship (1997) from the University of Tennessee, USA. He also completed a Certificate Pro-



gramme in Global Tobacco Control from the Johns Hopkins Bloomberg School of Public Health, USA (2011). He is currently a Professor at the Department of Pharmacy Practice, Kulliyah of Pharmacy, IIUM. He has more than 25 years of teaching and research experience in diverse

scopes ranging from pharmacy education, pharmacotherapeutics and tobacco control, especially smoking cessation. Haniki served as the first chairperson for the Immunisation Advocacy Chapter of the Malaysian Pharmacists Society (MPS) especially for COVID-19 vaccine advocacy. He is an expert panel for the

Malaysian Qualification Agency – Pharmacy Board Malaysia for both under and post-graduate pharmacy programmes. He is also the chairperson of the Certified Smoking Cessation Service Provider (CSCSP) programme of the Malaysian Academy of Pharmacy as well as the chairperson for the 2016 Clinical Prac-

tice Guidelines on Treatment of Tobacco Use Disorder. He is also the Chairman for the WHO FCTC Technical Working Group (evidence based) for the Malaysian Ministry of Health as well as Academic Editor for the Journal of Smoking Cessation. He has published numerous scientific works with particular interest in

tobacco control, and more specifically on smoking cessation. His current work focuses on improving knowledge and skills of health professionals in the promotion and maintenance of tobacco-free society and nation.

Mohammad Aizat Jamaludin is currently an Associate Professor and former Head of International Halal Audit and Certification at the International Institute for Halal Research and Training (INHART), International Islamic University Malaysia (IIUM).



He holds first and second degrees from the University of Malaya, Malaysia, in Fiqh and Jurisprudence and completed his Ph.D. at the Halal Products Research Institute (HPRI), Universiti Putra Malaysia, specialising in Shari'ah and Halal Laws. From

2009 until 2011, he served as a Trainer & Shari'ah Auditor at the Halal Industry Development Corporation (HDC). He has diverse experience in various halal industries, with a focus on shari'ah issues in the halal industry. Muslim-friendly tourism industry ecosystem, Malaysia's halal

certification requirements and internal halal audit. His areas of expertise include halal audit and certification, Muslim-friendly tourism ecosystem industry, as well as the fundamentals and determination of halal haram products. Additionally, he specialises in the Integration of Fiqh and Sci-

ence, Islamic and Halal Cleansing (sertu), Fiqh Consumerism, Fiqh al-Istihalah, al-Jallalah, al-Istihabah, al-Uruf, Halal Food Culture, Halal Training, and Halal Module Development. He has conducted numerous research projects and presented at conferences, both locally and internationally,

on halal and related matters. He was instrumental in establishing several halal certification bodies in Taiwan, Korea, and China. Presently, he serves as an advisor to several halal industry players and Muslim-friendly tourism and hospitality enterprises.

Mohd Affendi Mohd Shafri holds a Postgraduate Diploma in Islamic Science from International Islamic University Malaysia (2019), Bachelor in Medical Science (Hons.) from Cardiff University, (UK) (2005), a Masters in



Integrated Bioscience (Regenerative Medicine and Neuroscience) from Bath University (UK) (2006) and a PhD in Neurophysiology from Universiti Putra Malaysia (2013). He now serves as an Associate Professor at the

Biomedical Science Department, International Islamic University Malaysia in Kuantan and an Associate Member of the International Institute for Halal Research and Training (INHART), IIUM. His wide-ranging interest in biomedical science involves

regenerative studies of brain as well as other important organs such as bones, biofilm bacterial interaction with biological system, natural product and herbal medicine and development of halal pharmaceutical therapeutics. He has a special interest

in Malay medicine with over 30 works involving Malay medical manuscripts from which herbal and medical data are mined and channelled for use in other research areas. His research has been funded by various Malaysian federal ministries and in-

dustries as well as international organisations such as The Islamic Manuscript Association (UK) and Barakat Trust (UK).

Mohd Hafidz Mahamad Maifiah graduated with a Bachelor of Biomedical Science (Hons) and a Master of Biotechnology Engineering from the International Islamic



University Malaysia (IIUM). He then completed his Ph.D in Pharmaceutical Science from Monash University, Australia, in 2017. His Ph.D thesis elucidated

the mechanism of action of polymyxin therapy against multi-drug-resistant Gram-negative bacteria, adopting metabolomics and transcriptomics approaches. Currently, he is an Assistant

Professor at the International Institute for Halal Research and Training (INHART), IIUM. Currently he serves as the Head of Science and Technology at INHART. His research interests

encompass various areas of halal science, including halal food and pharmaceuticals, plant natural products for bioactive compounds, bacterial resistance, and metabolomics. Apart from his

core areas in scientific research, he is also involved in research related to halal management, such as cold chain management, halal certification, and consumer awareness.

Muhamad Shirwan Abdullah Sani is a registered chemist with a Ph.D in Halal Products Science from Universiti Putra Malaysia. He has knowledge and experience in halal authent-



ication via data analytics. He served as a registered chemist for the Department of Chemistry for the Ministry of Science, Technology, and Innovation as an expert witness in envi-

ronmental enforcement cases and has experience in method development for oil spill analysis. Muhamad Shirwan is a skilled trainer and consultant in halal assurance systems, in addition to his professional experience.

He is certified by the Department of Islamic Development Malaysia (JAKIM) and the Human Resource Development Fund (HRDF), and he has worked as a halal-related trainer and auditor in Japan, South Korea, Taiwan,

and Pakistan. Muhamad Shirwan is currently a Malaysian Institute of Chemistry (L/1643/5200/07) registered chemist and the Coordinator of Laboratories for the International Institute for Halal Research and Training

(INHART), International Islamic University Malaysia (IIUM). He received an international food safety and security grant from the Islamic Development Bank.

Author's Biography

Munecrah Binte Anwar graduated from the International Islamic University Malaysia (IIUM) in 2022 with a bachelor's degree in Quran and Sunnah Studies



(Hons.). During her internship in 2021, she was attached to the International Institute for Halal Research and Training (INHART), IIUM. Under the

supervision of Prof. Dr. Yumi, she was privileged to discover her potential, especially in doing research and writing, where she was exposed to other areas besides just focusing on the

Quran and Sunnah texts. She enjoys discovering and trying out new things like switching hobbies, travelling, and trying different cuisines. She is currently teaching the Quran and

Islamic studies to students of different age groups online and at mosques.

Nadia Mohd Nasir is a dedicated professional currently serving as a Senior Lecturer at the Centre for Graduate School, City University Petaling Jaya. She earned her Bachelor of Science in Architectural Studies in



2011 and obtained her Master's in Urban and Regional Planning from the International Islamic University Malaysia (IIUM) in 2013. Her career journey began as an Assistant Architect

and Building Information Modelling (BIM) trainer upon completing her studies. In 2022, she successfully completed her PhD in Halal industry from the International Institute for Halal Research and Training (INHART), IIUM, Malaysia. During her postgraduate studies, she

actively participated in various research projects, covering areas such as sustainable tourism, Muslim-friendly hospitality, urban and regional planning, and the built environment. Notably, she was awarded a fundamental grant for Capacity Frame-

work in Highly Sensitive Area Tourism. Driven by her strong interest in sustainability, Nadia enrolled in the CIDB's intensive Malaysian Carbon Reduction & Environmental Sustainability Tool (MYcrest) course, where she became a qualified facili-

tator and auditor. Amidst the challenges of the Covid-19 pandemic, she ventured into entrepreneurship, establishing her own business that delves into halal entrepreneurship.

Nadiyah Abdul Lateb obtained her Bachelor's degree in Shariah (Fiqh Usul) (Honors) from the University of Malaya in 2016, followed by a Master's degree in Islamic Business Studies



from Universiti Utara Malaysia in 2019. Her master's thesis, "The Practise of Halal Concept among Food Premises in Perlis," was completed during this time, showcasing her

dedication to exploring and enhancing the integrity of halal practises in Malaysia. Currently, she is pursuing her Ph.D in Halal Industry at the Institute of Halal Research and Training (INHART), International Islam-

ic University Malaysia (IIUM), focusing on the topic of halal poultry supply chain integrity. Additionally, she has been serving as a tutor at the Islamic Business School (IBS) at UUM

since 2020. In 2021, she earned the certification of Halal Executive from JAKIM, further solidifying her interest in the field of the halal industry. She is also an Academic Fellow for the Young

Southeast Asian Leaders Initiative (YSEALI) at the University of Nebraska (Omaha), USA, sponsored by the US Department of State in 2017.

Noor Faizul Hadry Nordin has a Bachelor of Science in Industrial Biotechnology (Hons.) (2000), an M.Sc. in Environmental Microbiology (2004), and a Ph.D. in Microbial Bioremedia-



tion from the University of Malaya (2012). He served in the Department of Biotechnology, Kulliyah of Science from 2004 to 2014 before moving to the Department of Biotechnology

Engineering, Kulliyah of Engineering (2015-2018). He is currently an Associate Professor at the International Institute for Halal Research and Training (INHART), IIUM. With over 19 years of teaching and research experi-

ence, his expertise spans diverse scopes, ranging from Bioinformatics and Computational Biology, Environmental Engineering, and Biotechnology to Molecular Biology, Polar Science, and Halal Science. He has also served as a

consultant and trainer for Bio-risk Management. Noor Faizul Hadry Nordin has published numerous scientific works, with a particular interest in microbial bioremediation, polar science, and more recently, halal-related

areas. His current work focuses on multiomics application, polar science, degradation of xenobiotic compounds, and halal authentication.

Noor Yuslida binti Hazahari has been an Assistant Professor at the International Institute for Halal Research and Training (INHART) since 2018. Her educational journey began at the International Islamic University Malaysia Matriculation Centre (IIUM MC) in 2001. Then,



she pursued a Bachelor's degree in Biotechnology (Honours) specialising in Food Biotechnology and graduated in 2007. After three years of teaching at the International Islamic School (IIS), she obtained her Master's in Biotechnology Engineering from IIUM in 2013. She

earned her Ph.D in Marine Life Science from Hokkaido University through a Japanese Government (Monbukagakusho: MEXT) Scholarship in 2018. Her research focused on the oxidative stability of plant and seaweed lipids as potential halal alternative ingredients. Upon her return to Malaysia, she developed a wide

range of interests, including halal alternative ingredients, plant and seaweed lipid technology, halal food science, food biotechnology, and bio-functional resources. Currently, she dedicates her expertise to three core areas: (a) Halal Products, (b) Food Sciences & Nutrition, and (c) Medical & Health Sciences.

She teaches subjects such as (i) Values, Technology & Society, (ii) Values, Ethics & Sustainability in Halal Industry, (iii) Sustainable Development: Issues, Policy & Practices, (iv) Halal Industry & Advanced Techniques Analysis, (v) Halal Assurance System, (vi) Ethics & Toyibab Concepts in Halal Products & Services,

and (vii) Contemporary Islamic Rulings on Halal Issues. She has received national and internal grants, is involved in shari'ah compliant research groups and projects at IIUM, and serves as an editorial member and reviewer for halal-related peer-reviewed journals.

Author's Biography

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Author's Biography

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Author's Biography

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Motivated by her profound passion for Food Science and the Halal Industry, Nurul Auni embarked on a Master of Science programme in Halal Industry Science at the International Institute for Halal Research and

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related areas. Her current work focuses on how natural products, traditional medicine, halal living, and the intersections of these elements can contribute to the promotion and maintenance of holistic health and well-being; of the people and environment.

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Blockchain: Revolutionising the halal Industry or a double-edged sword?

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IN the rapidly evolving world of technology, one innovation stands out as a potential game-changer for the halal industry: blockchain. While commonly associated with cryptocurrencies, blockchain's applications extend far beyond digital currencies. Its decentralised and transparent nature holds immense promise for ensuring halal integrity, enhancing consumer trust, and even revolutionising supply chains. However, as we delve into this groundbreaking technology, we must also consider the challenges and potential pitfalls it brings. Is blockchain truly the panacea for the halal industry, or does it come with its own set of challenges and dilemmas?

THE PROMISE OF BLOCKCHAIN

Blockchain technology, at its core, is a distributed ledger system that records

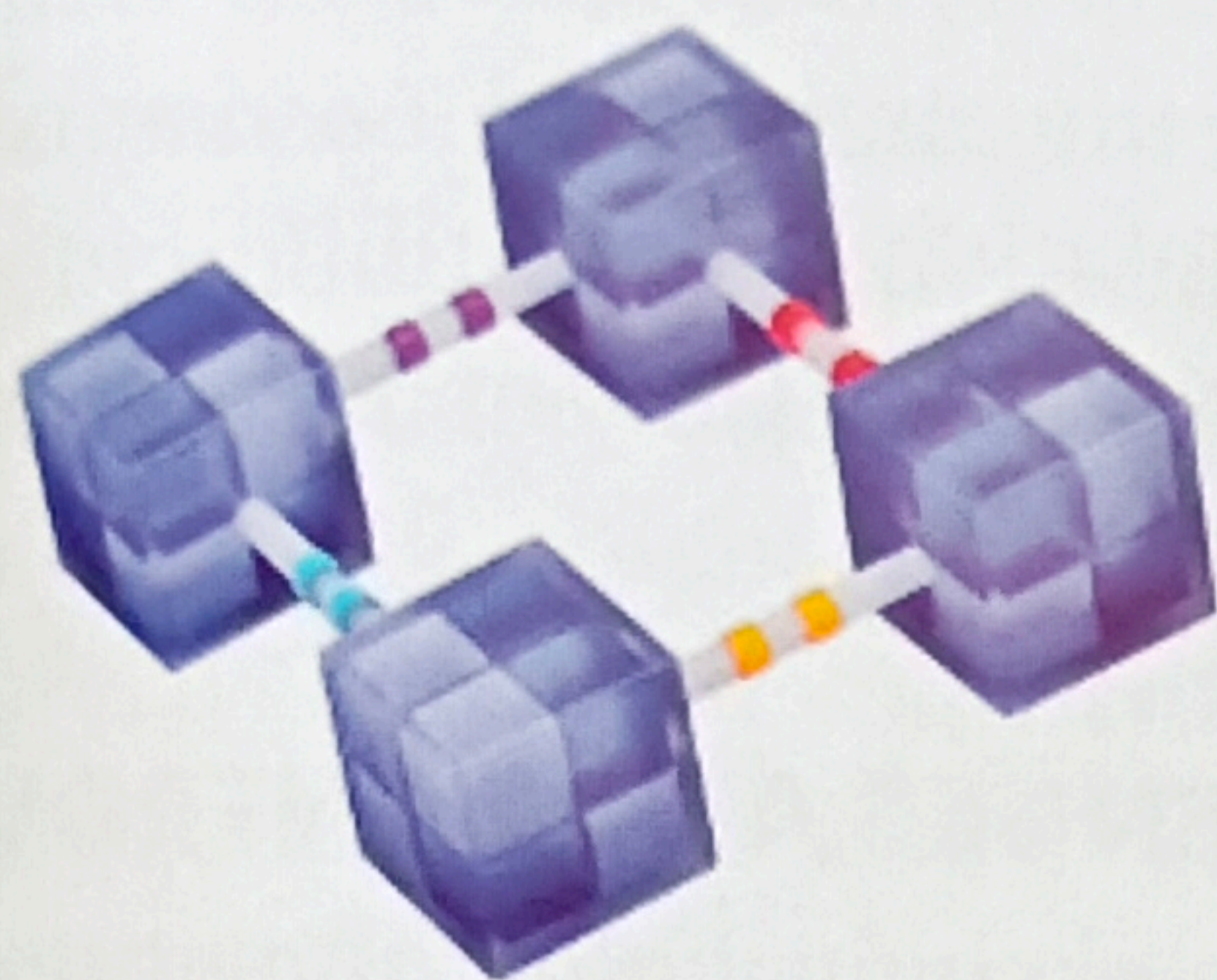
transactions across multiple computers. It offers unparalleled transparency, immutability, and security. For the halal industry, this presents a tremendous opportunity to address issues of trust and authenticity. With blockchain, every step of the halal supply chain can be documented and verified, from sourcing ingredients to production, and distribution. This potentially streamlines and simplifies the halal certification processes.

Imagine a world where all halal stakeholders, from companies to consumers and halal certification bodies, can seamlessly trace the origin of halal products and ingredients. With the power of blockchain technology, the stakeholders would have easy access to comprehensive information about a halal product's journey. In other words, the journey of a product from farm to fork can be easily traced. This includes details about the halal certification body involved, the slaughterhouse processes, and the authenticity of the documents provided. The transparency created by this technology is said to foster trust among consumers and reinforce their confidence in the halal

BLOCKCHAIN

Revolutionizing the Halal Industry or a Double-Edged Sword?

WHAT IS BLOCKCHAIN?



- A distributed ledger system that records transactions across multiple computers
- Offers unparalleled transparency, immutability, and security

APPLICATIONS



- Simplified certification process
- Secure data management
- Supply chain management
- Transparency for consumers
- Facilitating cross-border trade

CHALLENGES



- Data accuracy and reliability
- Data privacy concerns
- Scarcity of trained resources and technical expertise
- Cost implications
- Consumer willingness to pay

WAY FORWARD



- Collaboration
- Governance and regulation
- Shared knowledge and expertise

product [1]. At the same time, it empowers other halal stakeholders, such as producers, manufacturers, and certification bodies, by enhancing their credibility and reputation.

BLOCKCHAIN AND ITS HALAL INDUSTRY APPLICATIONS

It can be challenging for the average person to envision how blockchain technology could be effectively applied in various halal contexts. For instance, how could blockchain be used by halal certification bodies? How could we, as consumers, use this technology?

Traditionally, verifying the halal status of products involves complex paperwork and manual record-keeping. With blockchain, the certification process can be digitized, reducing administrative burdens for halal authorities. Halal authorities can securely store and manage certification data. Each certified product can be assigned a unique identifier that is recorded on the blockchain. This identifier then can be used to verify the halal status of the product, ensuring its authenticity and compliance with halal standards and requirements.

The blockchain application is not exclusive to halal certification bodies. Halal companies can also utilise blockchain to manage their supply chain. Blockchain's immutable (unchanged) and transparent nature, allows companies to track and trace their products; hence, safeguarding them against fraud and counterfeiting. It goes beyond tracing; companies can enable consumers to easily access detailed information about their products as consumers can simply scan the product's identifier via blockchain-based platforms or mobile applications. This gives consumers access to detailed information of the halal certification issued on the specified products, including the certification bodies responsible in issuing the certificate. Consumers may also get access to comprehensive ingredient lists, and even real-time updates on the sourcing

of ingredients. Through such transparency, halal food companies can empower consumers to make informed decisions that are aligned with their dietary choices and religious beliefs.

In addition, the companies could utilise blockchain's decentralised nature and immutability and make it well-suited for cross-border trade in the halal industry. It can simplify and speed up verification of halal certifications and ensure compliance with regulations across different countries, thereby facilitate international trade of halal products.

CHALLENGES AND CONTROVERSIES

While blockchain holds immense potential, its implementation in the halal industry is not without challenges and controversies. One concern perhaps is the accuracy and reliability of data entry. Blockchain's strength lies in its immutability, but if incorrect information enters the system, it becomes difficult to rectify. This issue becomes even more critical in the halal industry, where accuracy of information is important to maintain the integrity of the entire supply chain [2].

In addition, while the transparency feature of blockchain is a fundamental aspect of the technology, it can also compromise privacy. Depending on the design of the blockchain network, certain sensitive information may become publicly accessible. This poses a huge risk of exposing confidential details to competitors or unauthorized parties. Halal companies often possess proprietary information about their suppliers, manufacturing processes, or ingredient sources, which needs to be safeguarded. On the other hand, halal suppliers whose models rely on information asymmetries often guard their proprietary knowledge and may be hesitant to join blockchain-based platforms that may require them to share this sensitive information openly.

The fear of losing their competitive edge or compromising their market position discourages supplier participation in such platforms, despite the potential benefits offered by blockchain technology. This hinders the full capitalization of blockchain's potential advantages [3].

Adoption of blockchain technology is another significant challenge. Since it is a relatively new technology, there is limited trained resources and technical expertise to implement and utilise it effectively. Cost implications associated with implementing blockchain solutions might further hinder its widespread adoption, particularly in developing regions where many key halal players operate. The higher cost associated with implementing blockchain technology into supply chains may also affect the final price of the product, potentially deterring price-sensitive consumers. Although consumers want to access more information about halal products, a crucial question arises: Will consumers be willing to pay a premium for products tagged with blockchain technology; particularly considering the prevailing inflationary trends?

COLLABORATION AS THE WAY FORWARD

Given the multiple challenges in adopting blockchain in halal industry, collaboration among halal certification bodies, industry players, and technology experts is necessary to establish robust frameworks for blockchain implementation. Collaboration enables the establishment of standardized protocols and data formats thus fostering interoperable systems that facilitate seamless integration. This collective effort ensures that all participants adhere to consistent practices, promoting uniformity and reliability in data entry. In addition, by exercising caution and following standardized protocols, organizations can effectively protect sensitive data. This approach strikes a

balance between leveraging the benefits of transparency and immutability that blockchain offers while maintaining privacy and security. Appropriate governance and regulatory frameworks must also be established to ensure the integrity and effectiveness of blockchain solutions in the halal industry.

Through shared knowledge and expertise, everyone can work together to develop guidelines and standards that ensure the integrity and effectiveness of blockchain solutions in the halal industry. By fostering a collaborative environment, trust among participants could be promoted. This trust is vital for establishing a strong foundation for blockchain implementation in the halal supply chain, as it encourages widespread adoption and participation. The importance of collaboration and cooperation in endeavours that uphold righteousness and integrity is mentioned in the Quran,

“...and cooperate in righteousness and piety, but do not cooperate in sin and aggression. And fear Allah; indeed, Allah is severe in penalty” [Q. Al-Maidah, 5: 2]

THE INTERSECTION OF BLOCKCHAIN AND THE HALAL INDUSTRY

As we ponder on the intersection of blockchain and the halal industry, we find ourselves at a crossroad. Will blockchain usher in a new era of trust, integrity, and seamless traceability for halal products, revolutionising the industry? Or will its challenges prove insurmountable, making it a double-edged sword? The answer may lie in our collective efforts to harness the technology responsibly while being mindful of the challenges and controversies that may arise.

Without careful consideration and collaboration among stakeholders, blockchain may be left behind like other traceability tools that have struggled to gain widespread adoption.

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