

DEVELOPMENT OF CONCEPTUAL FRAMEWORK
FOR HALAL POULTRY INDUSTRIES BASED ON
MAQĀSID AL-SHARĪ'AH

BY

NADIAH ABDUL LATEB

A thesis submitted in fulfillment of the requirement for the
degree of Doctor of Philosophy (PhD in Halal Industry)

International Institute for Halal Research and Training
International Islamic University Malaysia

JULY 2025

ABSTRACT

The COVID-19 pandemic has significantly disrupted global supply chains, heightening consumer concerns regarding food safety and integrity. One critical area of interest is the halal poultry supply chain, particularly the maintenance of halal integrity from production to consumer purchase. Ensuring compliance with halal standards throughout the supply chain remains a key challenge, particularly during manufacturing and distribution. This study aims to address these concerns by identifying critical gaps in the halal poultry supply chain and proposing strategies to enhance its integrity. To examine the integrity of the halal poultry supply chain, this research employs document analysis and thematic analysis. Key regulatory documents analyzed include Manual Prosedur Pensijilan Halal Malaysia (Domestic) 2020 and MS1500:2019 Halal Food General Guidelines (Third Revision). Empirical data were gathered through in-depth interviews with three halal executives from leading halal poultry companies and five halal experts in Malaysia. The findings reveal several critical integrity dimensions: purity, hygiene, quality, and safety as well as opportunities for improvement in halal poultry practices. A conceptual framework for integrity in the poultry supply chain, grounded in *maqāṣid al-Sharī'ah*, is proposed. Thematic analysis of interview data highlights key factors influencing halal integrity, including government regulations and oversight, halal traceability and transparency, industry collaboration and best practices, and consumer confidence and education. While all three halal poultry companies demonstrated strong compliance with halal standards, particularly in animal welfare, slaughtering processes, and halal awareness training, variations in halal control points and monitoring systems were identified. These discrepancies underscore the need for stricter and more standardized oversight. Furthermore, the study finds that the five protections (*ḍarūriyyāt*) of *maqāṣid al-Sharī'ah*—protection of religion, life, intellect, lineage, and wealth—are highly relevant to the halal poultry industry. This research provides a comprehensive framework to ensure that poultry products bearing the halal certification genuinely uphold halal integrity. By addressing consumer and stakeholder concerns, the study enhances confidence in the halal poultry supply chain. The findings emphasize the necessity for collaboration among industry players, regulatory bodies, and consumers to safeguard halal integrity at every stage of the supply chain. The proposed strategies aim to strengthen consumer trust, support regulatory enhancements, and contribute to the long-term sustainability of the halal poultry industry in Malaysia and beyond.

ملخص البحث

أدى تفشي جائحة كوفيد-19 إلى اضطرابات كبيرة في سلاسل الإمداد العالمية، مما زاد من قلق المستهلكين بشأن سلامة الأغذية ونزاهتها. ومن بين المجالات الحيوية التي أثارت اهتمامًا متزايدًا سلسلة توريد الدواجن الحلال، لا سيما فيما يتعلق بالحفاظ على تكامل الحلال من مرحلة الإنتاج حتى وصول المنتج إلى المستهلك. لا تزال مسألة ضمان الامتثال لمعايير الحلال عبر سلسلة الإمداد تمثل تحديًا رئيسيًا، خاصة خلال مراحل التصنيع والتوزيع. يهدف هذا البحث إلى معالجة هذه القضايا من خلال تحديد الفجوات الحرجة في سلسلة توريد الدواجن الحلال واقتراح استراتيجيات لتعزيز نزاهتها. يعتمد هذا البحث على تحليل الوثائق والتحليل الموضوعي لدراسة تكامل سلسلة توريد الدواجن الحلال. ومن بين الوثائق التنظيمية الأساسية التي تم تحليلها دليل إجراءات شهادة الحلال الماليزي (للسوق المحلية) 2020 والمواصفة الماليزية MS1500:2019 – الإرشادات العامة للأغذية الحلال (المراجعة الثالثة). كما تم جمع البيانات التجريبية من خلال مقابلات متعمقة مع ثلاثة مسؤولين تنفيذيين في شركات رائدة للدواجن الحلال، بالإضافة إلى خمسة خبراء في مجال الحلال في ماليزيا. كشفت النتائج عن أربعة أبعاد أساسية لنزاهة الحلال تشمل الطهارة، النظافة، الجودة، والسلامة، إلى جانب فرص لتحسين ممارسات صناعة الدواجن الحلال. كما تم اقتراح إطار مفاهيمي لتعزيز نزاهة سلسلة توريد الدواجن يستند إلى مقاصد الشريعة الإسلامية. وأبرز التحليل الموضوعي للبيانات المستخلصة من المقابلات عدداً من العوامل الرئيسية التي تؤثر على نزاهة الحلال، من بينها: اللوائح الحكومية والرقابة، تتبع الحلال وشفافيته، التعاون الصناعي وتبادل أفضل الممارسات. وثقة المستهلك وتعزيز وعيه. وعلى الرغم من أن الشركات الثلاث العاملة في صناعة الدواجن الحلال أظهرت امتثالاً قوياً لمعايير الحلال، خاصة في مجالات رعاية الحيوانات، وعمليات الذبح، وبرامج التدريب على الحلال، إلا أن هناك اختلافات في نقاط التحكم في الحلال وأنظمة المراقبة المطبقة، مما يبرز الحاجة إلى رقابة أكثر صرامة وتوحيداً للمعايير. كما وجدت الدراسة أن الضروريات الخمس (الضروريات) في مقاصد الشريعة – وهي حفظ الدين، والنفس، والعقل، والنسب، والمال – تُعد شديدة الصلة بصناعة الدواجن الحلال يقدم هذا البحث إطاراً شاملاً لضمان أن المنتجات التي تحمل شهادة الحلال. تُحافظ فعلياً على نزاهة الحلال، كما تُسهم في تعزيز ثقة المستهلكين وأصحاب المصلحة في سلسلة توريد الدواجن الحلال. وتشدد النتائج على ضرورة التعاون بين الجهات الصناعية، والهيئات التنظيمية، والمستهلكين لحماية نزاهة الحلال في جميع مراحل سلسلة الإمداد. وتهدف الاستراتيجيات المقترحة إلى تعزيز ثقة المستهلك، ودعم تطوير اللوائح التنظيمية، والمساهمة في استدامة صناعة الدواجن الحلال في ماليزيا وخارجها على المدى الطويل.

APPROVAL PAGE

The thesis of Nadiah Abdul Lateb has been approved by the following:

Prof. Dr. Irwandi Jaswir
Supervisor

Assoc. Prof. Dr. Betania Kartika
Co-Supervisor 1

Prof. Ts. Dr. Azura Amid
Internal Examiner

Prof. Dr. Irwan Mohd Subri
External Examiner

Assoc. Prof. Dr. Azhar Mohd Ibrahim
Chairman

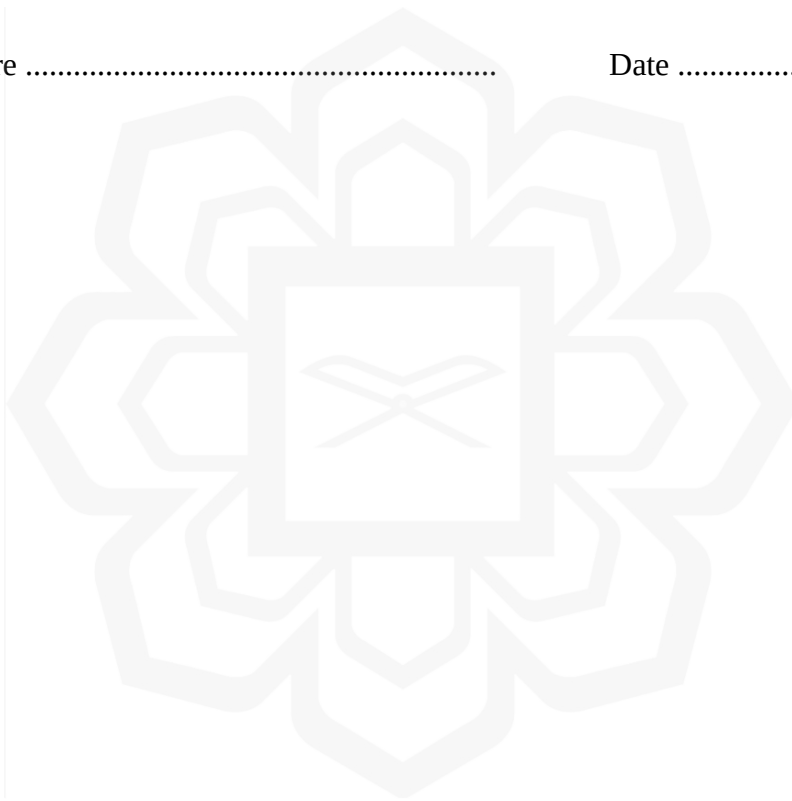
DECLARATION

I hereby declare that this thesis is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Nadiah Abdul Lateb

Signature

Date



INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

**DECLARATION OF COPYRIGHT AND AFFIRMATION OF
FAIR USE OF UNPUBLISHED RESEARCH**

**DEVELOPMENT OF CONCEPTUAL FRAMEWORK FOR
HALAL POULTRY INDUSTRIES BASED ON MAQASID AL-
SHARI'AH**

I declare that the copyright holder of this thesis is jointly owned by the student and IIUM.

Copyright © 2025 Nadiah Abdul Lateb and International Islamic University Malaysia. All rights reserved.

No part of this unpublished research may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior written permission of the copyright holder except as provided below

1. Any material contained in or derived from this unpublished research may only be used by others in their writing with due acknowledgement.
2. IIUM or its library will have the right to make and transmit copies (print or electronic) for institutional and academic purpose.
3. The IIUM library will have the right to make, store in a retrieval system and supply copies of this unpublished research if requested by other universities and research libraries.

By signing this form, I acknowledged that I have read and understand the IIUM Intellectual Property Right and Commercialization policy.

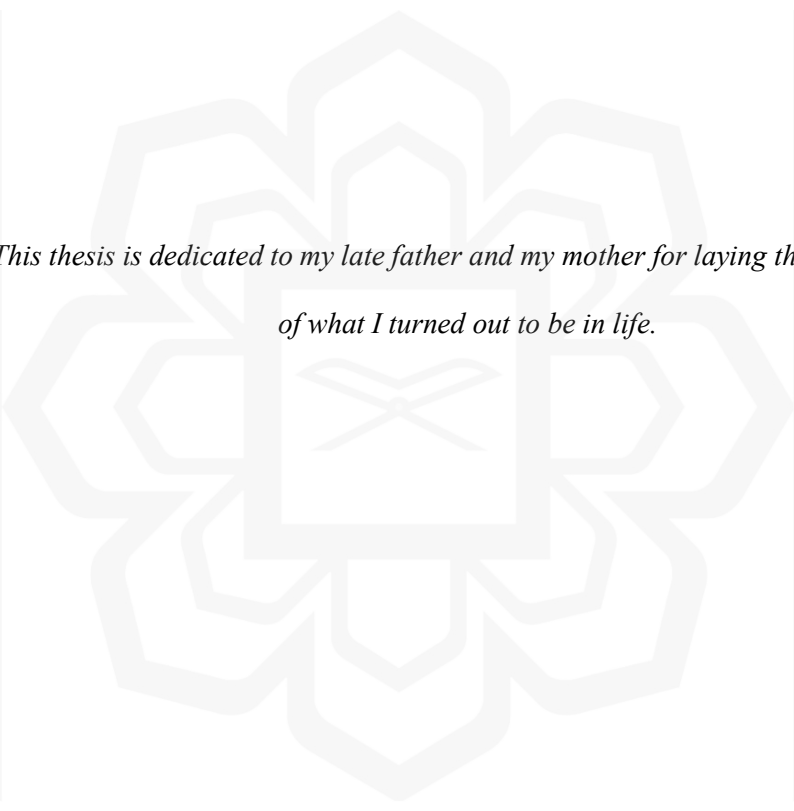
Affirmed by Nadiah Abdul Lateb

.....

Signature

.....

Date



*This thesis is dedicated to my late father and my mother for laying the foundation
of what I turned out to be in life.*

ACKNOWLEDGEMENTS

All praise and gratitude are due to Allah, the Most Gracious and Most Merciful, whose infinite wisdom, guidance, and grace have been my anchor throughout this academic journey. Without His countless blessings, this thesis would have remained an unfulfilled aspiration. The strength to persevere through challenges, the clarity of thought in moments of doubt, and the serenity to complete this work are testaments to His divine mercy. Alhamdulillah.

I owe a deep debt of gratitude to my supervisor, Prof. Dr. Irwandi Jaswir, whose unwavering support, intellectual rigour, and mentorship have profoundly shaped this work. His meticulous feedback, thought-provoking questions, and keen insights not only enhanced the quality of this research but also inspired my intellectual growth. Despite his numerous responsibilities, he always found time to guide me with patience and kindness. His encouragement and steadfast belief in my abilities were a source of strength during my most challenging moments.

I am equally grateful to my co-supervisor, Assoc. Prof. Dr. Betania Kartika, for her invaluable guidance, constructive feedback, and consistent support. Her collaborative spirit and scholarly contributions were instrumental in bringing this thesis to fruition. I am fortunate to have benefited from her expertise and generosity throughout this journey.

I am deeply grateful to Islamic Business School (IBS), Universiti Utara Malaysia (UUM) where I am privileged to serve as a tutor. Your support and resources have been instrumental in my academic growth. I would also like to express my deepest appreciation to Kementerian Pengajian Tinggi (KPT) under SLAB/SLAI Scholarship and Universiti Utara Malaysia (UUM) for sponsoring my PhD studies. Your generosity and investment in my education have made this journey possible, and I am eternally grateful for the opportunity to pursue this milestone.

To my beloved mother, Nazirah binti Dhaman, your unwavering prayers, unconditional love, and endless sacrifices have been my greatest source of strength. Your faith in me, words of encouragement, and the wisdom you imparted continue to guide my every step. I owe everything I have achieved to your boundless devotion and belief in my potential. I love you so much Ibu.

To my late father, Abdul Lateb bin Romli, may Allah (SWT) have mercy on his soul and grant him the highest ranks in Jannah. Your guidance, values, and dreams for my future have always been my beacon of light. This accomplishment is dedicated to your memory, and I pray that it serves as a continuous charity (*sadaqah jariyah*) in your honour. I love you and I miss you dearly Bapak.

To my dear grandmother, Habesah binti Sulaiman, your constant prayers and unconditional love have been a source of immense strength and comfort for me. Your devotion, kindness, and endless support have inspired me in ways beyond measure. I love you deeply, and I will forever be grateful for the light you bring into my life. May

Allah (SWT) bless you with good health and abundant rewards for all your sacrifices and prayers for me.

To my dear sister, Nabihah binti Abdul Lateb, your constant support, encouragement, and love have been a source of comfort and motivation throughout this journey. Your belief in my abilities and your presence in my life have meant more to me than words can express. Thank you for being a pillar of strength and understanding during this journey.

To my beloved brothers, Mohd Akhmar bin Abdul Lateb and Muhammad Azri bin Abdul Lateb, and all my extended family, your unwavering prayers, unconditional love, and unrelenting encouragement have been my bedrock. Your sacrifices, understanding, and patience during my moments of absence and preoccupation have not gone unnoticed. Your faith in me fuelled my determination to push forward, even when the path seemed insurmountable.

To my adorable nieces, Alaina Marissa and Naura Hanaan, and my wonderful nephews, Aydan Rezqi and Amar Mateen, your innocent laughter, smiles, and love have been a source of pure joy and inspiration. You have brightened my life in ways I cannot describe, and I hope this achievement makes you proud someday.

To my best friends (especially Hamizah), you have been my family away from home. Your endless encouragement, understanding, and laughter during the most stressful moments kept me grounded and focused. Your presence in my life is a gift, and I cherish the support and joy you've brought me throughout this journey. Last but not least, I would like to express my sincere appreciation to Harris for the support and encouragement you gave me during the correction period. Your presence and time brought me comfort and much needed motivation and I am truly grateful for you.

I humbly acknowledge that this thesis may not be perfect, as perfection belongs to Allah alone. However, it is my hope and prayer that this work will bring benefit to the ummah and contribute meaningfully to the advancement of knowledge in the field of halal studies, in shaa Allah.

Finally, I humbly thank Allah for surrounding me with individuals whose wisdom, compassion, and support have made this journey fulfilling. May He reward them all abundantly and accept this work as a contribution to the betterment of knowledge. Alhamdulillah, for the strength, guidance, and success that has accompanied me in this endeavour.

رَبِّ زِدْنِي عِلْمًا

(“My Lord, increase me in knowledge.”) – *Surah Taha: 114*

TABLE OF CONTENTS

Abstract	ii
Abstract in Arabic	iii
Approval Page.....	iv
Declaration	v
Copyright	vi
Dedication	vii
Acknowledgements.....	viii
List of Tables	xiv
List of Figures	xvi
List of Abbreviations	xvii
List of Glossaries	xviii
CHAPTER ONE: INTRODUCTION	1
1.1 Introduction.....	1
1.2 Background of the Study.....	1
1.3 Problem Statement	8
1.4 Research Question.....	10
1.5 Research Objectives	10
1.6 Scope of the Research	11
1.7 The Significance of the Research.....	11
1.8 Definition of Terms.....	12
CHAPTER TWO: LITERATURE REVIEW.....	15
2.1 Introduction to the Chapter	15
2.2 Relevant Discussion on Halal and Tayyib	16
2.3 The Concept of Halal	17
2.4 Supply Chain Management.....	20
2.4.1 Defining Supply Chain	20
2.4.2 Defining Supply Chain Management	21
2.5 Halal Supply Chain Management	23
2.5.1 Challenges and Issues in Halal Food Supply Chain Management.....	24
2.6 Overview of the Halal Poultry Industry in Malaysia.....	25
2.6.1 Halal Regulatory Systems in The Halal Poultry Industry in Malaysia.....	30
2.6.2 Halal Assurance System (HAS).....	33
2.6.3 Halal Certification for the Poultry Industry	33
2.6.4 Challenges and Issues in The Halal Poultry Industry	39
2.7 Exploring the Halal Integrity Dimension.....	41
2.7.1 Pure	42
2.7.2 Hygiene	45
2.7.3 Safe	46
2.7.4 Quality	49
2.8 The Application of Halal Poultry.....	51

2.8.1 Production Ex-Ante	51
2.8.2 Production in Process.....	52
2.8.3 Production Ex-Post	54
2.9 Opportunities for Enhancing Halal Food Supply Chain Integrity	55
2.9.1 Government Regulations and Oversight.....	55
2.9.2 Halal Traceability and Transparency	56
2.9.3 Industry Collaboration and Best Practices.....	57
2.9.4 Consumer Confidence and Education.....	58
2.10 Elements of <i>Maqāṣid Al-Sharī'ah</i> in Halal Poultry	59
2.10.1 Protection of Religion.....	64
2.10.2 Protection of Life	65
2.10.3 Protection of Intellect.....	66
2.10.4 Protection of Lineage.....	67
2.10.5 Protection of Wealth	68
2.11 Conclusion	69
CHAPTER THREE: RESEARCH METHODOLOGY	70
3.1 Introduction to the Chapter	70
3.2 Philosophical Assumption	70
3.3 Research Design	71
3.4 Research Population	72
3.5 Sampling Procedure and Sample Size	72
3.6 Research Instrument	74
3.7 The Development of the Interview Protocol.....	75
3.8 Data Collection Plan	75
3.8.1 Document Analysis.....	76
3.8.2 In-depth Interview.....	78
3.8.3 Multiple Case Study.....	79
3.8.4 Getting Access	80
3.8.5 Actual Fieldwork	81
3.8.6 Interview Stages.....	81
3.8.7 Data Analysis Procedures	82
3.8.7.1 Application of Creswell's Data Analysis Framework Using ATLAS.ti Version 25	84
3.9 Ethical Consideration.....	85
3.10 Conclusion	87
CHAPTER FOUR: FINDINGS AND DISCUSSION.....	88
4.1 Multiple Case Studies	88
4.2 Description and Selection of Multiple Case Studies	88
4.3 Profile of the Poultry Industry Players Involved in the Multiple Case Studies.....	89
4.3.1 Company A	89
4.3.2 Company B	91
4.3.3 Company C	92
4.4 Documentation.....	94
4.4.1 Halal Poultry Processing.....	95
4.4.1.1 Pre-Slaughter Handling.....	95
4.4.1.2 Electrical Stunning.....	97
4.4.1.3 Halal Slaughter.....	98

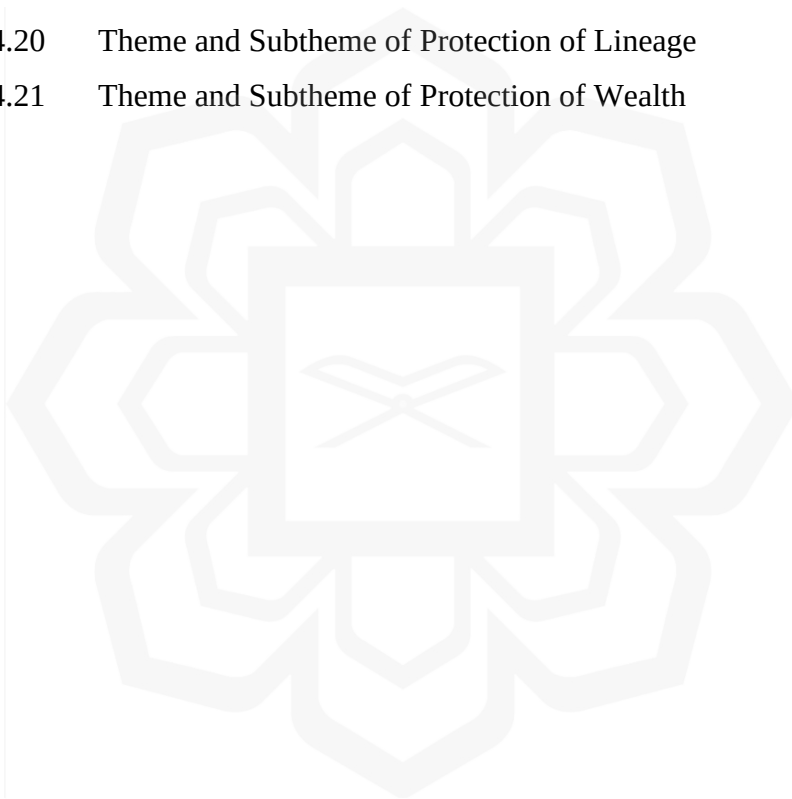
4.4.1.4 Halal Management System	100
4.4.1.5 Safety and Quality System.....	101
4.5 Comparison and Contrast of the Multiple Case Studies.....	103
4.5.1 Company A	103
4.5.2 Company B	104
4.5.3 Company C	105
4.6 Findings and Discussion	107
4.6.1 Justification for Selected Halal Integrity Dimensions	108
4.7 RO 1: The Concept of Halal Supply Chain Integrity in the Context of Halal Poultry Industries in Malaysia	109
4.7.1 RO 1 Findings.....	110
4.7.1.1 Pure	110
4.7.1.2 Hygiene	115
4.7.1.3 Safe	119
4.7.1.4 Quality.....	122
4.8 RO 2: The Practice of the Application of Halal Supply Chain Integrity in the Context of Halal Poultry Industries in Malaysia	131
4.8.1 Profile of the Informants.....	132
4.8.2 RO 2 Findings.....	133
4.8.2.1 Pure	133
4.8.2.2 Hygiene	138
4.8.2.3 Safe	142
4.8.2.4 Quality.....	147
4.8.3 Conclusion	153
4.9 RO 3: The Opportunities for Enhancing the Halal Supply Chain Integrity in the Context of Halal Poultry Industries in Malaysia.....	155
4.9.1 Introduction.....	155
4.9.2 Profile of the Informants.....	155
4.9.3 RO 3 Findings	157
4.9.3.1 Government Regulations and Oversight.....	158
4.9.3.2 Halal Traceability and Transparency	162
4.9.3.3 Industry Collaboration and Best Practices	167
4.9.3.4 Consumer Confidence and Education.....	171
4.9.4 Conclusions.....	175
4.10 RO 4: Conceptual Framework for Practicing Integrity in the Halal Supply Chain Industry in the Context of the Halal Poultry Industry in Malaysia Based on <i>Maqāṣid Al-Sharī'ah</i>	175
4.10.1 Profile of Informants.....	176
4.10.2 RO 4 Findings.....	177
4.10.2.1 Protection of Religion	177
4.10.2.2 Protection of Life	180
4.10.2.3 Protection of Intellect.....	184
4.10.2.4 Protection of Lineage	187
4.10.2.5 Protection of Wealth	190
4.10.3 Conclusion	194
4.11 Discussion.....	198
4.11.1 Objective One	198
4.11.1.1 Pure	198
4.11.1.2 Hygiene	200
4.11.1.3 Safe	201

4.11.1.4 Quality.....	202
4.11.2 Objective Two.....	204
4.11.2.1 Pure	204
4.11.2.2 Hygiene	205
4.11.2.3 Safe	207
4.11.2.4 Quality.....	208
4.11.3 Objective Three.....	210
4.11.3.1 Government Regulations and Oversight	210
4.11.3.2 Halal Traceability and Transparency	212
4.11.3.3 Industry Collaboration and Best Practices	214
4.11.3.4 Consumers' Confidence and Educations	216
4.11.4 Objective Four	219
4.11.4.1 Protection of Religion	219
4.11.4.2 Protection of Life	220
4.11.4.3 Protection of Intellect.....	221
4.11.4.4 Protection of Lineage	222
4.11.4.5 Protection of Wealth	224
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS	227
5.1 Introduction.....	227
5.2 Contribution of the Research	227
5.3 Research Limitations	229
5.4 Areas of Future Research.....	231
REFERENCES.....	232
APPENDIX A: INTERVIEW FORM.....	258
APPENDIX B: PROTOCOL INTERVIEW FOR HALAL EXECUTIVE.....	259
APPENDIX C: PROTOCOL INTERVIEW FOR HALAL ACADEMICIAN/EXPERTS	261
APPENDIX D: PROTOCOL INTERVIEW FOR HALAL CONSULTANT/AUDITOR.....	263
LIST OF PUBLICATIONS	265

LIST OF TABLES

Table 1.1	Global Muslim Population (Source: Pew Research Center (2011))	5
Table 1.2	Halal Poultry Cases in Malaysia. Source: (M. H. Ali & Suleiman, 2018)	9
Table 2.1	Definitions of supply chain according to authors	21
Table 2.2	Definitions of supply chain management according to authors	22
Table 2.3	Halal Certified Slaughterhouses in Malaysia. Published by JAKIM 2023	26
Table 2.4	Regulatory bodies in Halal poultry operations	32
Table 2.5	Category of the slaughterhouse. Source: (JAKIM, 2020)	34
Table 2.6	The category for the halal poultry industry. Source: (JAKIM, 2020)	35
Table 4.1	Pure Dimension based on MPPHM (Domestic) 2020 and MS1500:2019	111
Table 4.2	Hygiene Dimension based on MPPHM (Domestic) 2020 and MS1500:2019	116
Table 4.3	Safe Dimension based on MPPHM (Domestic) 2020 and MS1500:2019	120
Table 4.4	Quality Dimension based on MPPHM (Domestic) 2020 and MS1500:2019	123
Table 4.5	Rubric on the Integrity Practice for Halal Poultry Chain	126
Table 4.6	Profile of informants from the poultry industry	132
Table 4.7	Pure Dimension on Halal Poultry Chain	133
Table 4.8	Hygiene Dimension on Halal Poultry Chain	139
Table 4.9	Safe Dimension on Halal Poultry Chain	142
Table 4.10	Quality Dimension on Halal Poultry Chain	148
Table 4.11	Profile of the Informants for RQ 3	156
Table 4.12	Themes and Sub-themes of Government Regulations and Oversight	159

Table 4.13	Themes and Sub-themes of Halal Traceability and Transparency in Malaysia	163
Table 4.14	Themes and Sub-themes of Industry Collaboration and Best Practices	167
Table 4.15	Themes and Sub-themes of Consumer Confidence and Education	171
Table 4.16	Profile of the Informants for RO 4	176
Table 4.17	Theme and Subtheme of Protection of Religion	178
Table 4.18	Theme and Subtheme of Protection of Life	180
Table 4.19	Theme and Subtheme of Protection of Intellect	185
Table 4.20	Theme and Subtheme of Protection of Lineage	188
Table 4.21	Theme and Subtheme of Protection of Wealth	191



LIST OF FIGURES

Figure 1.1	Global Halal Food Market Forecast. Source: (IMARC, 2020)	6
Figure 2.1	Conceptual Framework. Source: Self-construct	15
Figure 2.2	Halal Certification Process	37
Figure 2.3	Slaughtering part of the chicken (Marzuki et al., 2012)	53
Figure 2.4	Methods of slaughtering chicken	53
Figure 4.1	Receiving of chickens from the farm and chicken delivered using trucks (a), (b) the chicken in the holding area before hanging up on the shackle's conveyor	96
Figure 4.2	Inspection area (ante-mortem) (a) and container tilting (b)	96
Figure 4.3	The hanging area (a) and Electrical water-bath stunning (b)	98
Figure 4.4	Halal slaughtering process (a) and bleeding time (b)	99
Figure 4.5	Halal inspection (a) and head puller (b)	100
Figure 4.6	Spin Chiller (a) and packing process (b)	101
Figure 4.7	Vehicles equipped with a closed cooling system (chiller) for transport and distribution of chicken meat	102
Figure 4.8	Flow Chart of the slaughtering process at Company A	103
Figure 4.9	Flow Chart of the slaughtering process at Company B	104
Figure 4.10	Flow Chart of the slaughtering process at Company C	105
Figure 4.11	Themes and Sub-themes for RO 3	158
Figure 4.12	Conceptual Framework of Halal Integrity Poultry Supply Chain based on <i>Maqāṣid al-Sharī'ah</i>	195

LIST OF ABBREVIATIONS

DVS	Department of Veterinary Services
GHP	Good Hygiene Practice
GMP	Good Manufacturing Practice
HAS	Halal Assurance System
HDC	Halal Development Corporation
HFSCM	Halal Food Supply Chain Management
JAIN	States Department of Religious Affairs
JAKIM	Department of Islamic Development Malaysia
MAIS	Islamic Religious Affairs Council
MHMS (2020)	Malaysian Halal Management System (2020)
MOH	Ministry of Health
MPHMP (2011)	Malaysian Protocol for Halal Meat and Poultry (2011)
MPPHM (Domestic) 2020	Manual Procedure for Malaysia Halal Certification Domestic (2020)
MS1500:2019	Malaysian Standard 1500:2019 Halal Food-General Guideline (Third Revision)
NOSS	National Occupational Skills Standards
QA	Quality Assurance
QC	Quality Control

LIST OF GLOSSARIES

<i>al-Sharī'ah</i>	Islamic Law
<i>Daruriyyat</i> ,	Necessities
<i>Fatwa</i>	Religious Ruling
<i>Hadith</i>	The compilations of traditions of the Prophet Muhammad (PBUH)
<i>Hajiyyat</i>	Needs
<i>Halal</i>	Permissible
<i>Halqum</i>	Trachea
<i>Haram</i>	Forbidden
<i>Istislah</i>	Public benefit
<i>Maqāṣid</i>	Purposes or objectives
<i>Mari'</i>	Oesophagus
<i>Maslahah</i>	Public interest
<i>Mughallazah</i>	Heaviest form of pollutants like pig and dog
<i>Mashbuh</i>	Suspected
<i>Najs</i>	Impure
<i>Quran</i>	Muslim holy scripture
<i>Sadd al-Dhara'i</i> ,	Blocking the means
<i>Sunnah</i>	The life, actions and teachings of the Prophet Muhammad (PBUH)
<i>Tahsiniyyat</i>	Luxuries
<i>Tayyib</i>	Good or wholesome
<i>Wadajain</i>	Arteries

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

This study focuses on developing a conceptual framework for halal poultry industries based on *maqāṣid al-Sharī'ah*. Based on the documented halal standards for the poultry supply chains, this study will highlight the emphasis and procedural approaches to purity, hygiene, safety, and quality within documented halal standards for the poultry supply chain, focusing on MPPHM (Domestic) 2020 and MS1500:2019. Then, this study will examine the halal integrity practices across the dimensions of purity, hygiene, safety, and quality within the halal poultry supply chain industries. After that, this study will identify critical areas in improving the integrity of the halal poultry supply chain in Malaysia from the halal experts' perspectives. As a result, the purpose of this study is to add to the growing body of knowledge about the halal integrity of the food supply chain that focuses on the halal poultry industries in Malaysia.

This chapter gives an overview of the thesis' context by summarizing the research background and identifying the research topic, as well as the research objectives and research questions, the significance of the research and the thesis structure.

1.2 BACKGROUND OF THE STUDY

Halal is an Arabic term derived from the Quran that signifies what is permitted, lawful, or permissible. Its counterpart is Haram, which denotes what is prohibited, unlawful, or impermissible. In Islam, issues concerning the concepts of Halal and Haram, along with any related disputes, must be resolved based on the Quran and Sunnah (Prophetic traditions) (Tieman, 2011). These terms are universal, encompassing all aspects of

human activities, whether related to worship (*ibadat*), social transactions (*muamalat*), or social interactions (*mua'sharah*). Specifically, Halal in the context of food is defined by the teachings of the Quran and Sunnah. Furthermore, as asserts, advancements such as Halal supply chain management necessitate a collaborative effort to derive and expand principles from the primary Islamic sources, the Quran and Sunnah (Gunardi, 2021).

One of a Muslim's duties is to acquire and consume halal and pure food. Consuming halal food is a mandate and command from Allah, and it is an essential component of the Islamic faith, according to the Quran and Hadith.

يَا أَيُّهَا النَّاسُ كُلُوا مِمَّا فِي الْأَرْضِ حَلَالًا طَيِّبًا ۖ

Translation: "O mankind, eat whatever is on earth (that is) lawful and pure"

Surah al-Baqarah (2): 168

Islam is the only religion that provides us with a full and precise way of life, as well as comprehensive norms and standards that every Muslim is expected to uphold. In the Quran, the word "halal" refers to what is allowed and legal. The term "halal" refers to the dietary norm established by the lawgiver, which states that any food is permissible as long as it is not listed as haram, which is illegal or forbidden.

Allah encourages us to consume anything good that has been provided by Him and thank Him for all the blessings. He then clarifies that no food is haram except for the four types described in the Quran. The four types of prohibitions of eating dead things, the prohibition of flowing blood, the prohibition of pork and the prohibition of anything committed anybody other than Allah.

إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخَنزِيرِ وَمَا أُهِلَّ لِغَيْرِ اللَّهِ بِهِ فَمَنْ اضْطُرَّ
غَيْرَ بَاغٍ وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ إِنَّ اللَّهَ غَفُورٌ رَحِيمٌ

Translation: *He has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah. But whoever is forced (by necessity), neither desiring (it) nor transgressing (its limit), there is no sin upon him. Indeed, Allah is Forgiving and Merciful.*

Surah al-Baqarah (2): 173

The virtue of deeds that are acceptable and appealing to Allah is described in the hadith below from Sahih Muslim, which is one of its beauties. It begins by noting that the Arabic word for Allah (*Subhanahu Wa Ta'ala*) is *tayyib*. In this hadith, *tayyib* refers to Allah SWT, who is referred to as "the pure," even if its literal meaning is "something nice." Allah is beyond all impurities and needs because He is pure and flawless. Allah SWT has all the qualities of perfection and totality. He does not require a spouse or children and does not need to relax or go to sleep. This one remark of the Prophet SAW in which every flaw or weakness is eliminated from Allah, implies all of these qualities.

According to scholars, this section of the hadith applies to all acts, not only wealth that is pure or earned via legal ways. That is unless an act is free of everything that might make it unclean, Allah SWT would not accept it. The Shariah law should guide our behaviour, hence it should be legal. Our actions must be carried out only for Allah's sake, without any hint of pretension, display, or seeking the approval of anybody other than Allah.

عَنْ أَبِي هُرَيْرَةَ، قَالَ قَالَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ " أَيُّهَا النَّاسُ إِنَّ اللَّهَ طَيِّبٌ لَا يَقْبَلُ إِلَّا طَيِّبًا وَإِنَّ اللَّهَ أَمَرَ الْمُؤْمِنِينَ بِمَا أَمَرَ بِهِ الْمُرْسَلِينَ فَقَالَ { يَا أَيُّهَا الرُّسُلُ كُلُوا مِنَ الطَّيِّبَاتِ وَاعْمَلُوا صَالِحًا إِنِّي بِمَا تَعْمَلُونَ عَلِيمٌ } وَقَالَ { يَا أَيُّهَا الَّذِينَ آمَنُوا كُلُوا مِنْ طَيِّبَاتِ مَا رَزَقْنَاكُمْ } " . ثُمَّ ذَكَرَ الرَّجُلُ يُطِيلُ السَّفَرَ أَشْعَثَ أَغْبَرَ يَمُدُّ يَدَيْهِ إِلَى السَّمَاءِ يَا رَبِّ يَا رَبِّ وَمَطْعَمُهُ حَرَامٌ وَمَشْرَبُهُ حَرَامٌ وَمَلْبَسُهُ حَرَامٌ وَغُذِيَ بِالْحَرَامِ فَأَنَّى يُسْتَجَابَ لِذَلِكَ " .

Translation: *Abu Hurairah (May Allah be pleased with him) said: The Messenger of Allah (ﷺ) said, "O people! Allah is Pure and, therefore, accepts only that which is pure. Allah has commanded the believers as He has commanded His Messengers by saying: 'O Messengers! Eat of the good things, and do good deeds.' (23: 51) And He said: 'O you who believe (in the Oneness of Allah - Islamic Monotheism)! Eat of the lawful things that We have provided you...' (2: 172). Then he (ﷺ) made a mention of the person who travels for a long period of time, his hair is disheveled and covered with dust. He lifts his hand towards the sky and thus makes the supplication: 'My Rabb! My Rabb!' But his food is unlawful, his drink is unlawful, his clothes are unlawful and his nourishment is unlawful, how can, then his supplication be accepted?"*

(Sahih Muslim 1015)

According (Qardhawi, 1993), the word halal originates in the Arabic language and means allowed, acceptable, permitted, and permissible. The term halal is not limited to food or food items, as most people believe, but rather encompasses all elements of a Muslim person's life (male or female). In this context, the notion of the halal supply chain is based on the requirement for every Muslim to have religiously allowed items. As a result, the term "halal supply chain" refers to the entire process from farming to consumption. Islamic Shari'ah is based on two primary sources: the Holy Quran and the Sunnah.

Halal is one of the world's fastest-growing sectors, with approximately 1.8 billion Muslims as consumers. Halal has grown in popularity and demand in worldwide marketplaces, making it more than just a religious duty for Muslims, but also a significant economic force. According to the most recent demographic projections from the Pew Research Center's Forum on Religion & Public Life, the world's Muslim population will increase by about 39% over the next 20 years, from 1.8 billion in 2020 to 2.2 billion by 2030.

Over the next decades, the Muslim population is expected to expand at roughly double the rate of non-Muslims, with an average annual growth rate of 1.5 per cent for Muslims compared to 0.7 per cent for non-Muslims. If current trends continue, Muslims will account for 26.4 per cent of the world's anticipated population of 8.3 billion people in 2030.

Table 1.1 Global Muslim Population (Source: Pew Research Center (2011))

	2010		2030	
	ESTIMATED MUSLIM POPULATION	ESTIMATED PERCENTAGE OF GLOBAL MUSLIM POPULATION	PROJECTED MUSLIM POPULATION	PROJECTED PERCENTAGE OF GLOBAL MUSLIM POPULATION
World	1,619,314,000	100.0%	2,190,154,000	100.0%
Asia-Pacific	1,005,507,000	62.1	1,295,625,000	59.2
Middle East-North Africa	321,869,000	19.9	439,453,000	20.1
Sub-Saharan Africa	242,544,000	15.0	385,939,000	17.6
Europe	44,138,000	2.7	58,209,000	2.7
Americas	5,256,000	0.3	10,927,000	0.5

As the world's Muslim population expands, so does the need for halal food. Another crucial factor driving this market's expansion is increased consumer demand for halal food. According to the *State of the Global Islamic Economy Report 2023/24* by DinarStandard, Muslim consumer spending across Islamic economy sectors reached USD 2.29 trillion in 2022, with halal food imports by OIC member countries valued at USD 359 billion and projected to grow at a 7.6% CAGR to USD 492 billion by 2027, reflecting strong and rising demand in the halal market (Liqat, 2023).

In recent years, halal cuisine has garnered increasing interest from non-Muslim consumers, driven by perceptions of superior cleanliness, quality, and hygiene. This shift in consumer attitudes is anticipated to positively influence market growth in the foreseeable future (Zulfakar et al., 2012). Halal food, prepared in strict adherence to Islamic dietary laws, prohibits the consumption of certain items such as pork, blood, alcohol, and animals not slaughtered in the name of Allah (M. M. Rahman et al., 2024).

These rigorous standards resonate with health-conscious consumers seeking high-quality and ethically prepared food options. Studies indicate that non-Muslim consumers often associate halal certification with enhanced food safety and hygiene, contributing to its broader appeal beyond religious boundaries (Rezai et al., 2012).

Figure 1.1 shows that in 2021, the worldwide halal food industry was worth \$1.978 billion. Looking ahead, the market is expected to reach US\$ 3,907.7 billion by 2027, with a compound annual growth rate (CAGR) of 11.24 per cent between 2022 and 2027 (Research and Market, 2022).



Figure 1.1 Global Halal Food Market Forecast. Source: (IMARC, 2020)

With the increase in demand for products and services which are safer, nutritious and possess better quality attributes, the halal industry was forced to explore more avenues that could meet and satisfy the customers providing certainty as to the halal nature of the food it offers may be especially important for the customers (Khan et al., 2019). Given the rising demand for halal food in recent years, the recognition of halal food is important in informing the consumers that the product or the food is pure, clean and safe to consume. This demonstrates that halal food or products have been the main

priority nowadays (Siti Khalilah Basarud-Din, 2013). With the predicted expansion of the halal food market, the issue of worldwide procurement of raw ingredients would necessitate additional efforts to ensure halal traceability across borders (Soon et al., 2017).

Thus, halal food can provide certainty for Muslims to consume without any worries. Issues like food fraud that used halal certification to gain more profit have been a major issue for a long time (Arif & Sidek, 2015). Lately, Malaysia has been targeted for these halal issues due to the meat cartel scandal that provided non-slaughtered meat to the Malaysian halal market. This has affected the integrity of the Malaysian halal market industry (Ahmad et al., 2022; Muhammad Asyraf et al., 2023). The image of the halal food industry has been tarnished due to an increasing number of frauds in halal certification and physical contamination of halal food products. Halal food consumers started to question the authenticity of the halal integrity of the halal food products that they consumed especially products that came from non-Muslim majority countries (Zulfakar et al., 2012).

This study will study the integrity of the halal food supply chain in the context of halal poultry because research that was related to that issue is limited which has shown a significantly huge gap in the body of knowledge (Majid et al., 2019). There is a huge gap in the body of knowledge and a limited number of publications on the research theme of halal food supply chains and halal integrity, especially those focusing on the poultry industries. Other than that, there is a big challenge for all the parties involved to ensure the integrity of the halal product is intact throughout the whole food supply chain. There are several opportunities for the protection of halal integrity among halal stakeholders. To protect halal integrity, a complete understanding of the whole halal food supply chain is required.

This study will present four dimensions of halal integrity which are pure, hygiene, safe and quality (Norasekin, 2016; Ramli, Rosman, Khan, et al., 2020). Ali et al., (2017) through various case studies, highlighting the relevance of supply chain integration practices to enhance halal food integrity. Thus, the researcher will integrate the integrity dimension to form a suitable conceptual framework with *maqāṣid al-Sharī'ah* in the context of the halal poultry industry in Malaysia. (Tieman,

2017) emphasized that halal integrity is becoming more important in sectors and governments, with an emphasis on security issues that jeopardize the product's halal integrity.

1.3 PROBLEM STATEMENT

The focus of halal food management has evolved from an organization-centred approach to a supply chain perspective to meet global demand while adopting an efficient distribution system. Halal food chains can be complicated and broad, and Muslims' food preferences have recently shifted. To preserve halal standards and integrity across the supply chains, products must adhere to recognized halal standards (Bonne & Verbeke, 2008).

However, the halal food supply chain is vulnerable to multiple risks, notably cross-contamination, adulteration, and non-compliance with halal procedures (Rejeb, 2018; Zainuddin et al., 2020). Physical contamination can occur at numerous stages, particularly in supply chains involving imports from non-Muslim countries where understanding of halal standards may be limited (Bonne & Verbeke, 2008). This raises concerns over the halal status of globally sourced products among Muslim consumers.

A major issue is the authenticity of halal food, particularly in detecting intentional adulteration where non-halal ingredients are substituted for economic reasons. This compromises both product quality and consumer trust (Jabatan Perkhidmatan Veterinar, 2022). The situation emphasizes the need for robust halal verification mechanisms throughout the supply chain. Table 1.2 shows a few examples of halal poultry cases in Malaysia from 2017 to 2023.

Table 1.2 Halal Poultry Cases in Malaysia. Source: (M. H. Ali & Suleiman, 2018)

Issue	Year	Relevance to Halal Chicken Integrity
Halal meat cartel involving mislabelled poultry imports	2017	Undermines consumer trust; questionable chicken traceability
JAKIM audit: non-compliance in poultry slaughterhouses	2021	Gaps in slaughtering, hygiene, and internal Halal control
Shortage of certified halal poultry auditors	2022	Weak enforcement in poultry plants, risking non-compliance
Consumer complaints on unclear halal logo in chicken-based products (e.g., nuggets, sausages)	2022	Labelling issues create doubt about product authenticity
Imported frozen chicken from questionable sources due to supply shortage	2023	Raises concerns over overseas halal slaughter certification

In Malaysia, halal poultry especially chicken is a staple and represents the most consumed meat in the country (Jabatan Perkhidmatan Veterinar, 2022). Yet, despite an established halal certification system, recent events have raised serious concerns about the integrity of the halal chicken supply chain. The 2017 meat cartel scandal revealed that frozen non-halal meat, including poultry, had been falsely relabeled and distributed as halal for decades, highlighting deep flaws in enforcement (M. F. Ariffin et al., 2021).

Due to the disruption of the supply chains for both poultry and animals as a result of the COVID-19 epidemic, consumers started to become more concerned about the safety of their food supply (Aday & Aday, 2020). Halal poultry is one of the most talked-about topics that has recently gotten greater attention. The problem with the poultry has gone through a specific "farm to fork" process (N. S. Sulaiman & Mohammad, 2022).

Based on the explanation above, the primary challenge is ensuring that products stay halal throughout the whole supply chain process, particularly during the manufacturing and distribution stages. This research aims to develop the conceptual framework for halal poultry industries based on *maqāsid al-sharī'ah*. This research

provides a complete implementation approach to verify that the food items ingested are halal.

1.4 RESEARCH QUESTION

1. How do documented halal standards emphasize and operationalize the dimensions of purity, hygiene, safety, and quality in the Halal poultry supply chain?
2. How do poultry companies implement and sustain the integrity dimensions of purity, hygiene, safety and quality across stages in their supply chains?
3. What are the key factors influencing the enhancement of integrity in Malaysia's halal poultry supply chain from the perspectives of halal industry experts?
4. How can the *maqāṣid al-Sharī'ah* framework be applied to enhance the integrity of the halal poultry supply chain in Malaysia?

1.5 RESEARCH OBJECTIVES

1. To analyze the emphasis and procedural approaches to purity, hygiene, safety, and quality within documented halal standards for the poultry supply chain, focusing on MPPHM (Domestic) 2020 and MS1500:2019.
2. To examine the halal integrity practices across the dimensions of purity, hygiene, safety, and quality within the halal poultry supply chain industries.
3. To identify critical areas in improving the integrity of the halal poultry supply chain in Malaysia from the halal experts' perspectives
4. To develop a halal supply chain integrity framework based on *maqāṣid al-Sharī'ah* principles, integrating dimensions of purity, hygiene, safety, and quality within the halal poultry industry.

1.6 SCOPE OF THE RESEARCH

The goal of this research is to develop a conceptual framework for implementing integrity in the halal food supply chain according to *maqāṣid al-Sharī'ah* in the context of halal poultry industries in Malaysia.

The study will use a qualitative method using multiple case studies from several poultry industries in Malaysia that own halal certification and have over 70,000 total productions per day. This study will be conducted with an in-depth interview of a few halal committee members and halal executives of the halal poultry industries and interviews with a few academicians and experts in the halal food supply chain field.

The period of this study is conducted starting from Feb 2023 until March 2024 (13 months). The researcher started collecting the data from March 2023 until November 2023 and began to analyze the data from October 2023 until June 2024.

1.7 THE SIGNIFICANCE OF THE RESEARCH

This research is significant for several reasons, and the researcher hopes that it may help a few parties directly or indirectly. There are two components to this study's importance. Contributions to the body of knowledge and contributions to the industry.

Firstly, the significance of this study will contribute to our knowledge and comprehension of the halal food supply chain, particularly about the halal integrity component.

Secondly, the findings of this study will help the food manufacturers in practicing good practices of halal food supply chain in their business activities.

This study will help the public and society to understand the halal food supply chain, especially on the halal integrity aspect which is vital for them to understand and to get the only best quality of foods to consume in everyday life.

Lastly, this study aims to strengthen the integrity of the halal food supply chain, especially in the poultry industry, therefore benefiting the food sector, governments concerned about the supply chain and Muslim consumers. Halal integrity is essential for the continued growth of the booming halal industry.

1.8 DEFINITION OF TERMS

The following terminology is explained in the context of this study to help better understand the topic.

Halal is a word that defines something permissible. According to (Kamus Dewan Bahasa, 2007) and Manual Prosedur Pensijilan Halal Malaysia (Domestik) 2020, (JAKIM, 2020) the word halal gives meaning to something permissible and not forbidden by Islamic law. In Arabic, the word halal means lawful or permissible (Al-Teinaz et al., 2020). Non-Muslims generally identify the term "halal" with only the foods that Muslims can consume. However, it encompasses all authorized actions and thoughts for Muslims. Halal is not only required for all Muslims, but it is also a fundamental and crucial idea in Islam. Every Muslim must consume halal matter such as food and everyday needs.

Halal food supply chain applies the same principles as the conventional supply chain with a special exception on the type of products that are being handled. The halal food supply chain involves the process of planning, implementing and controlling the efficient flow and storage of halal-certified products from the source to the demand point (Kurniawati & Cakravastia, 2023). It can also be referred to as the process of managing the procurement, movement, storage and handling of food products through

the organization and the supply chain in compliance with the general principles of Sharia law (Zulfakar et al., 2012).

Halal integrity is a crucial concept in the halal food supply chain, encompassing compliance with Islamic law throughout production, logistics, and delivery processes (Anggraini et al., 2023). It involves ensuring authenticity and transparency from "farm to fork" to maintain consumer trust and prevent fraud (Majid et al., 2019). Key factors influencing halal supply chain integrity include quality assurance, trust, commitment, and asset specificity (Zulfakar et al., 2012). Traceability systems play a vital role in enhancing transparency, although barriers exist in adopting advanced technologies, particularly in developing countries (Anggraini et al., 2023). The concept of halal integrity extends beyond food products to various industries, necessitating a comprehensive approach to ensure compliance and genuineness (Abu et al., 2018). To address challenges in cross-border trading and varying interpretations of halal practices, efforts are being made to develop conceptual models and information systems that support knowledge processes within organizations (Mohammad et al., 2020).

Halal slaughter, as defined by Islamic law, involves cutting the carotid arteries, jugular veins, esophagus, and windpipe while reciting Allah's name, without prior stunning (Abd El-Rahim et al., 2023; Awan & Sohaib, 2016). This method is believed to facilitate maximum blood drainage, resulting in higher quality meat with better preservation (Abd El-Rahim et al., 2023). However, there is ongoing debate among Islamic scholars regarding the acceptability of pre-slaughter stunning for halal meat production (Fuseini et al., 2017). Some jurists argue that modern stunning methods can be approved if they improve animal welfare without compromising halal requirements, while others insist on adhering to traditional practices. The compatibility of modern slaughter techniques with halal principles continues to divide scholarly opinion within the Muslim community, impacting the global halal meat market (Fuseini et al., 2016, 2017)

Maqāṣid al-Sharī'ah is the combination of the terms *maqāṣid* and *al-Sharī'ah*. The term "*maqāṣid*" is a plural form of the word "*maqsud*," which is derived from the verbs "*qasada*" and "*yaqsudu*" and has several meanings, including "toward a path," "toward a purpose," "middle," "fair," "not exceeding limits," and "a straight road" (El-

Mesawi, 2020). While *Sharī'ah* is a word from the holy Quran and Sunnah it is not influenced by any human's thoughts. Hence, *maqāṣid al-Sharī'ah* is a terminology which carries wholesome meanings and values towards achieving the blessing from the Almighty Allah S.W.T (El-Mesawi, 2020). *Maqāṣid al-Sharī'ah*, or the objectives of Islamic law, represents the divine intents and moral concepts underlying Shariah (Auda, 2008). It encompasses three levels of necessity: necessities (*daruriyyat*), needs (*hajiyyat*), and luxuries (*tahsiniyyat*). Traditionally, it focuses on five core elements: protection of faith, life, lineage, intellect, and property (Baharuddin et al., 2019). However, some scholars, like Ibn Ashur, advocate for a broader interpretation that considers the overall human life system. *maqāṣid al-Sharī'ah* offers flexibility in interpreting Shariah, distinguishing it from the more technical *usul al-fiqh* (Ghazali, 2014). While classical literature addressed *maqāṣid* implicitly, recent works explore it more explicitly and extensively, applying it to various fields including science and technology (Kamali, 2017). This concept is crucial for Islamic scholars in understanding *Shariah* texts and addressing contemporary Muslim issues. *Maqāṣid al-Sharī'ah* refers to the objectives or purposes underlying Islamic law (*Sharī'ah*).

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION TO THE CHAPTER

In this chapter, the concept of the halal supply chain frames the study and how the ideas evolved. This chapter will review the literature regarding the halal supply chain mainly about halal integrity in the context of poultry industry.

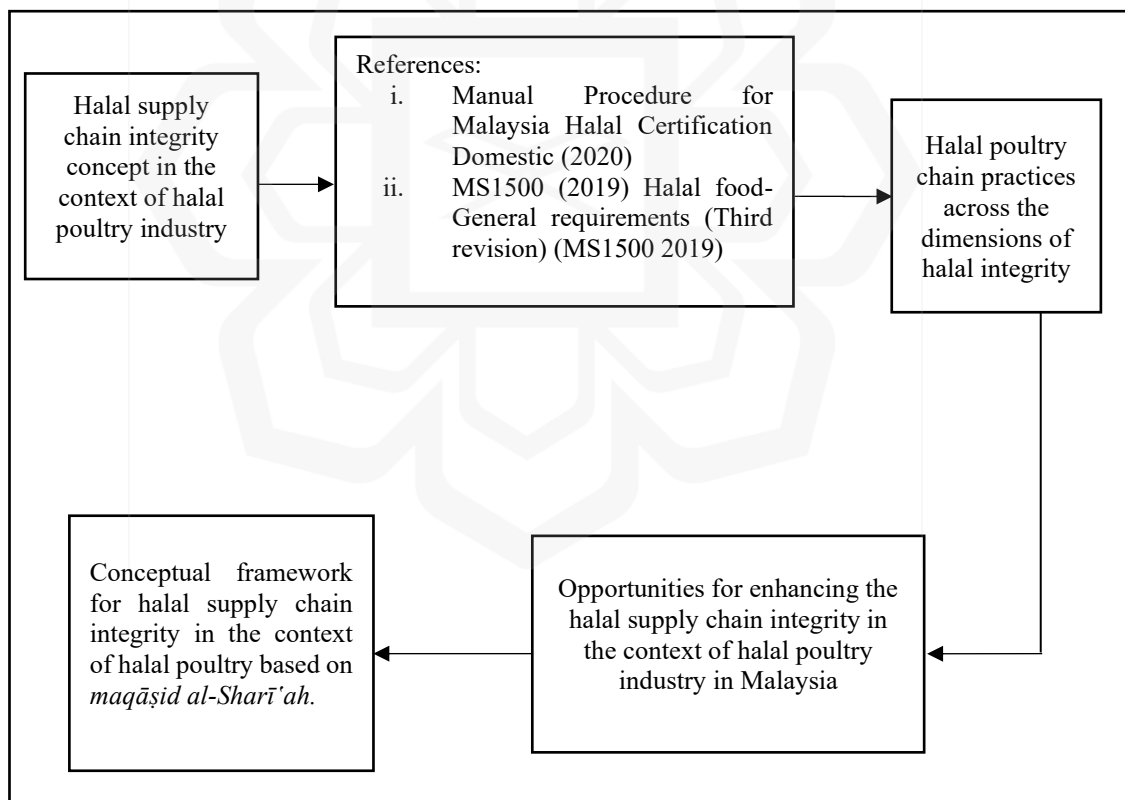


Figure 2.1 Conceptual Framework. Source: Self-construct

Based on Figure 2.1, firstly, the researcher reviews the literature on the concept of halal supply chain integrity in the context of halal poultry from various books and journals to understand more about that topic. Secondly, the researcher gathered and studied all the references related to halal poultry in Malaysia to explore the operationalization of the halal supply chain in the context of halal poultry. Then, the researcher conducted a case study on the selected halal poultry manufacturers in Malaysia to do some in-depth interviews on the practice of halal supply chain integrity. After that, the researcher explored some of the opportunities that could enhance the halal supply chain integrity in the halal poultry industry. Finally, the researcher will provide a conceptual framework of halal supply chain integrity in the context of halal poultry, based on *maqāṣid al-Sharī'ah*.

2.2 RELEVANT DISCUSSION ON HALAL AND TAYYIB

Islam establishes two fundamental standards for food consumption: Halal (permitted by Islamic Shariah) and *tayyib* (wholesome). Halal and *tayyiban* encompass the concept of wholesomeness, which includes quality, cleanliness, and safety for all. Muslims are obligated to consume halal food and refrain from any food prohibited in Islam. Eating halal food promotes a healthier life, and the consumption of good, permissible food can reflect positive attitudes and behaviors (Emi Normalina et al., 2011).

From the Islamic point of view, food to be consumed must not only be that which is permissible by Islamic regulations but must be of good quality. Every Muslim must uphold the principle of *Halalan Tayyiban*, which relates directly to their food (Mohd Yunus et al., 2010). The idea of *Halalan Tayyiban* has now gone beyond religious concerns and into the world of commerce and trade, particularly concerning the whole food supply chain activities (Omar, Emi Normalina, et al., 2013).

From the perspective of the industry, the principle is viewed as a sign of unquestionable devotion to purity, hygiene, safety, and high-quality standards. Thus,

the commercialization of the *Halalan Tayyiban* idea in certifying and promoting Halal products offers strong economic potential in line with the rising demand in the global market.

To maintain both elements (*Halalan Tayyiban*), the preparation, production, and distribution of the product following the Halal certification criteria must follow certain procedures. This can be seen by the Malaysian government's prepared halal standards to meet both elements of halal and *tayyib* for example; MPPHM Domestic 2020; MS1500:2019, MS1900, MS2400 and Malaysian Protocol for the Halal Meat and Poultry.

According to these principles, the term "Halal" is defined as "from farm to fork," and food that is consumed by the consumers must be wholesome and made from resources that are allowed in a clean, hygienic way (Al-Teinaz et al., 2020; J. Sulaiman et al., 2021).

2.3 THE CONCEPT OF HALAL

The concept of halal is a fundamental pillar in Islamic teachings, regulating not only dietary practices but also a broad range of activities encompassing lifestyle, finance, and commercial conduct. Derived from the Arabic word *ḥalāl* (حلال), meaning "permissible" or "lawful," halal refers to anything that is allowed by the Shariah (Islamic law). While the term haram indicates what is forbidden, prohibited, or deemed unacceptable. Both halal and haram encompass every aspect of a Muslim's life, extending beyond food to a broader lifestyle. Halal is regarded as a comprehensive way of life. This view aligns with (Wilson & Liu, 2010), who asserted that halal goes beyond being a branding concept; it embodies faith-based practices and ethical behaviour central to a Muslim's everyday existence. While its most popular application is in the context of food and beverage, halal has evolved into a comprehensive ethical system that touches upon every aspect of a Muslim's life, including consumption, finance, tourism, pharmaceuticals, cosmetics, and even fashion.

The legitimacy and authority of the concept of halal stem directly from divine revelation. The Qur'an explicitly outlines what is halal (permissible) and haram (forbidden). One of the central verses that underscores the importance of consuming what is lawful reads:

يَا أَيُّهَا النَّاسُ كُلُوا مِمَّا فِي الْأَرْضِ حَلَالًا طَيِّبًا ۚ

Translation: “O mankind, eat whatever is on earth (that is) lawful and pure”

Surah al-Baqarah (2): 168

This verse not only highlights the permissibility of consumption but also links it with *tayyib* (pure and wholesome), suggesting a dual requirement of legality and ethical quality in what is consumed. Further verses reinforce this concept:

إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنْزِيرِ وَمَا أُهِلَّ لِغَيْرِ اللَّهِ بِهِ فَمَنْ اضْطُرَّ غَيْرَ بَاغٍ وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ ۚ إِنَّ اللَّهَ غَفُورٌ رَحِيمٌ

Translation: *He has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah. But whoever is forced (by necessity), neither desiring (it) nor transgressing (its limit), there is no sin upon him. Indeed, Allah is Forgiving and Merciful.*

Surah al-Baqarah (2): 173

These and other injunctions clearly delineate the boundaries of halal and haram, with specific prohibitions rooted in spiritual, ethical, and hygienic concerns. The Sunnah of Prophet Muhammad (peace be upon him) further complements the Qur'anic directives by providing practical applications and interpretations of halal principles, particularly in the slaughtering of animals, trade ethics, and dietary laws.

Importantly, halal is not limited to the permissibility of a product or action; it is closely linked with the concept of *tayyib*, meaning wholesome, clean, and ethical. This symbiosis emphasizes not just ritual compliance but also quality, safety, and ethical

sourcing (Nafis, 2019). In this light, halal is a dynamic framework that resonates with global concerns regarding sustainability, traceability, hygiene, and fair trade.

Over the past few decades, halal has transitioned from a purely religious observance to a booming global industry. Driven by the increasing Muslim population expected to surpass 2 billion by 2030 and rising awareness among non-Muslim consumers about halal's quality and ethical dimensions, the halal sector has witnessed exponential growth (ISA HALAL, 2023).

According to (Deepa, 2025), the global halal food market alone was valued at approximately USD 2.93 trillion in 2024, with projections estimating growth to USD 9.45 trillion by 2034. This reflects not only religious demand but also a wider consumer preference for products that are traceable, high-quality, and ethically sourced.

The halal industry now encompasses multiple sectors:

- Halal Food and Beverages: Remains the core of the industry, with growing segments in organic and ready-to-eat products.
- Islamic Finance: Offers banking services free from interest (*riba*), speculation (*gharar*), and unethical investments.
- Halal Pharmaceuticals and Cosmetics: Ensures that ingredients are free from animal-derived haram substances like pork gelatin or alcohol, and that manufacturing complies with Shariah.
- Modest Fashion and Halal Tourism: Reflect the lifestyle aspirations of Muslims who seek products and experiences consistent with Islamic ethics.

In terms of geographical spread, the Asia-Pacific region holds the largest market share, accounting for over 23% of the global halal food industry. Countries such as Malaysia, Indonesia, India, and Australia are recognized for their halal certification bodies and product exports (Sigh, 2025). Meanwhile, in the Middle East and Africa, strong regulatory support and the digitalization of halal markets particularly via e-commerce are accelerating industry development.

Despite its growth, the halal industry faces several challenges. These include inconsistent certification standards across countries, lack of global harmonization, and the need for innovation to meet changing consumer expectations. However, these challenges also present opportunities for standardization, research, and policy-making to enhance trust and transparency in halal markets.

In sum, halal is not merely a religious requirement but a global movement rooted in principles of purity, ethics, safety, and social responsibility. Understanding the holistic nature of halal and its practical implementation across various sectors is essential for advancing the discourse on halal integrity and ensuring its relevance in an increasingly interconnected world.

2.4 SUPPLY CHAIN MANAGEMENT

2.4.1 Defining Supply Chain

There are various definitions of supply chain among scholars. Here, the researcher listed a few definitions of supply chain according to the scholars found in books and article journals on the topic of supply chain.

The term "supply chain" first appeared in the late 1980s and gained popularity in the 1990s. Previously, organizations used terms like "logistics" and "operations management" instead.

Here are several definitions of supply chains. According to (Lu, 2011) a supply chain is defined as a group of inter-connected participating companies that add value to a stream of transformed inputs from their source of origin to their end products or services that are demanded by the designated end consumers. Meanwhile, Chopra & Meindl (2007) define a supply chain as it includes all parties engaged, directly or indirectly, in the fulfilment of a customer request. The supply chain consists of not just manufacturers and suppliers, but also transporters, warehouses, retailers, and even

customers. The supply chain for each organisation, such as manufacturing, covers all functions involved in receiving and fulfilling a client request. These functions include but are not limited to new product creation, marketing, operations, distribution, financing, and customer support. Lambert et al. (1998) define supply chain as the alignment of firms that bring products or services to market. Table 2.1 below summarizes the definitions of the supply chain from different experts.

Table 2.1 Definitions of supply chain according to authors

Authors	Definition
(Lu, 2011)	A group of inter-connected participating companies that add value to a stream of transformed inputs from their source of origin to their end products or services that are demanded by the designated end consumers.
(Chopra & Meindl, 2007)	Includes all parties directly or indirectly to fulfil the customers' requests.
(Lambert et al., 1998b)	A supply chain is a chain of companies which deliver goods or services to the marketplace.

2.4.2 Defining Supply Chain Management

A supply chain management definition can be both straightforward and complex. In almost all businesses, it is widely known and widely practised, which makes it dead easy. The "A, B, and C" hardly need to be interpreted or repeated. It is also exceptionally difficult because the definition must include everything supply chain management has accomplished in practice (Lu, 2011).

Meanwhile, according to Hugos (2011), supply chain management is the management of manufacturing, storage, location, and transportation among the partners in a supply chain to achieve the greatest balance of responsiveness and effectiveness for the market being supplied.

According to (Lu, 2011) supply chain management is simply and ultimately business management, whatever it may be in its specific context, which is perceived and enacted from the supply chain perspective.

According to Sutherland (2007), supply chain management is defined as the preparation and execution of all operations related to sourcing and procurement, conversion, and logistics management. It also includes collaborating and coordinating with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. Fundamentally, supply chain management blends supply and demand management inside and across businesses. Table 2.2 below summarizes the definitions of the supply chain management from different experts.

Table 2.2 Definitions of supply chain management according to authors

Authors	Definition
(Hugos, 2011)	Supply chain management is the coordination of production, inventory, location and transportation among the participants in a supply chain to achieve the best mix of responsiveness and efficiency for the market being served.
Lu (2011)	Supply chain management is simply and ultimately business management, whatever it may be in its specific context, which is perceived and enacted from the supply chain perspective.
Joel Sutherland (2007)	Supply Chain Management is the planning and management of all operations related to sourcing and procurement, conversion, and logistics. It also entails coordination and collaboration with channel partners, who may be suppliers, intermediaries, third-party service providers, or customers. Fundamentally, supply chain management blends supply and demand management inside and across businesses.

Defining supply chain management as such has already raised the current business management idea from the organizational domain to the supply chain domain, hence improving strategic objectives. In today's competitive atmosphere, a supply chain

competes with another supply chain rather than one enterprise. As a result, supply chain management offers a fresh look at standard tasks.

2.5 HALAL SUPPLY CHAIN MANAGEMENT

A regular supply chain emphasises cost-effectiveness in the movement of products from production to consumption. Nonetheless, a halal supply chain incorporates the fundamentals of halal compliance at every stage, guaranteeing that every product complies with Islamic dietary regulations. Preserving religious and cultural purity entails stringent control of raw materials, manufacturing, service, and customer involvement. Halal supply chains need to be certified and follow certain guidelines, such as removing substances that are forbidden (haram), treating animals humanely, and making sure that there is no cross-contamination with non-halal products (M. H. Ali & Suleiman, 2018).

According to Usman, (2020) the halal supply chain management system consists of three factors which are the direct contact of the non-conformance, the product's characteristic risks and the consumer's perceptions. Market demands, local fatwas, and cultural practices shape how halal products are perceived, adding another layer of responsibility for businesses. Government regulations on food safety and quality help ensure compliance, with halal certification bodies providing essential guidelines (Mohd Irzat Rozaidy, 2017; Supian & Rashid, 2018). However, securing high-quality halal raw materials remains a challenge due to limited supply. To overcome this, businesses need to build strong relationships with suppliers and carefully manage their inventory (Tieman & Ghazali, 2013). Research on halal-certified suppliers, such as slaughterhouses and restaurants, aims to create a practical supply chain model that not only upholds halal integrity but also improves delivery accuracy and cost efficiency.

One of the key topics for halal study in recent years has been halal supply chain management. The chains of halal food have grown quite extensive and intricate due to the growth and expansion of the Muslim community worldwide (Azmi et al., 2018;

Zailani et al., 2017). Muslim customers now have access to a variety of manufactured meals and ingredients because of advancements in food technology and global distribution. To provide customers confidence and trust in halal products, producers must implement a halal supply chain (Omar, Wan Marhaini Wan, Shams Rahman, 2017).

2.5.1 Challenges and Issues in Halal Food Supply Chain Management

According to Ali & Suleiman (2018), there were several challenges in safeguarding halal integrity which include issues with human resources, outsourcing, labelling and franchising. Human resource challenges involve in lack of knowledge, training, and high staff turnover, which obstruct standard implementation. Meanwhile, for outsourcing, it can be one of the main risks to food integrity without proper coordination and control. Outsourcing is the practice of hiring external firms to handle certain business processes or services that could not be performed internally. Food companies often outsource to focus on their core operations and benefit from specialized expertise such as in logistics (transportation and warehouse) or preservation processes which they may lack in-house. Outsourcing can help maintain product freshness, safety, and integrity and can be cost-effective especially when the company does not have the required equipment or trained workers. One of the primaries focuses of risk in (Halal Food Supply Chain Management) HFSCM is outsourcing and the increase in the procurement of raw material or ingredients activities (Haleem et al., 2020, 2021; Khan et al., 2018).

The second challenge with HFSCM is labelling. (Saifudin et al., 2018) define labelling as the process of applying or placing a label to anything. Labels range from basic adhesive tags to intricate designs (like logos) that represent a product's identity, description, endorsement, and classification. Halal product labelling is a vital communication tools for informing consumers about halal food items (Rejeb et al., 2021). Marketers should design halal labels that minimize information asymmetry and enhance consumer confidence in the authenticity and quality of halal food. Since food

fraud often involves the misuse of halal certification logos on packaging, research should prioritize consumer-focused tools that help verify the legitimacy of halal certification on food products (Rejeb et al., 2021; van der Spiegel et al., 2012). One of the key factors in preventing food fraud and maintaining food integrity is to have adequate labelling because it helps consumers make wise choices and trust the authenticity of the products, they purchase (Ahmad et al., 2022).

Lastly, the third challenge in food supply chain management is franchising. Franchising presents difficulties in maintaining consistent quality and integrity across outlets due to varying operational practices and the potential conflict of interest between franchisors and franchisees. Franchising plays a vital role in maintaining halal integrity in the food industry by acting as an intermediary between the local firm and market transactions (Quoquab et al., 2019). Franchisors impose operational standards through franchise agreements to ensure franchisees comply with halal guidelines. However, ensuring compliance across countless outlets and geographical locations is very challenging. Differences in motivation between franchisors and franchisees can impact compliance with standards, potentially affecting halal integrity. Franchising is intended to be jointly beneficial, but the relationship's impact on maintaining halal integrity requires further investigation (M. H. Ali, Tan, et al., 2017; M. H. Ali & Suleiman, 2018).

2.6 OVERVIEW OF THE HALAL POULTRY INDUSTRY IN MALAYSIA

Malaysia is a predominantly Muslim country and halal food is an important aspect of our culture and society. The halal poultry industry in this country plays a significant contributor to its economy and provides a substantial amount of employment opportunities (Prayuda et al., 2023).

The domestic demand for broiler meat is among the highest in Malaysia, making the poultry industry a crucial provider of affordable protein for the country's multi-ethnic population (Abdurofi et al., 2017; A. S. Ariffin et al., 2014). Broiler meat holds a unique status across different ethnic groups, as it faces no religious restrictions. As

one of the fastest-growing agricultural sectors, the poultry industry delivers high-quality, cost-effective meat and is the most advanced and self-sufficient livestock sector in Malaysia, achieving over 100% self-sufficiency. The average broiler production cost stands at RM4.40/kg, with feed expenses accounting for 66% of total costs, followed by day-old chick costs at 19% (Nurshuhada et al., 2021).

Poultry farms in Malaysia are generally well-equipped, modern and adapting advanced technology and scientific methods to breed and raise chickens in a safe environment. These farms are subjected to stern regulations and guidelines set by the Department of Veterinary Services to ensure the chickens are in good condition and disease-free (Bahri et al., 2019).

The halal poultry industry in Malaysia is raised on different scales. There are small-scale, medium-scale and large-scale industries. There are 140 halal-certified slaughterhouses in Malaysia. Table 2.3 below showed halal certified slaughterhouses in Malaysia.

Table 2.3 Halal Certified Slaughterhouses in Malaysia. Published by JAKIM 2023

States	Halal-Certified Slaughterhouse
Perlis	1. Nas Madi Venture Sdn. Bhd.Kuala Perlis 2. Advance Chicken Processing (M) Sdn. Bhd. Arau 3. Kompleks Rumah Sembelih Jejawi, Jabatan Perkhidmatan Veterinar
Kedah	1. Ayam Al Hilal Sdn Bhd, Kuala Ketil 2. IBY Puyuh Jaya Enterprise, Gurun 3. Ternakan N&A Wawasan Sdn. Bhd. Karangan 4. Ayam Belida Sdn. Bhd. Yan 5. Bismi Gergas Sdn. Bhd. Alor Setar 6. Wangsa Maju Jaya Enterprise, Kota Setar 7. Hajar Hijrah Sdn Bhd, Kuala Ketil 8. KT Tulus Jaya Enterprise, Alor Setar 9. Ayam Mega Sdn.Bhd. Kulim 10. Jimat Jaya Sdn. Bhd. Sungai Petani
Penang	1. Ayam Hebat Prosesan Sdn. Bhd. Bukit Mertajam 2. SLX Agriculture Products Sdn. Bhd .Bukit Mertajam 3. Hapinaga Sdn. Bhd. Bukit Mertajam 4. Pemborong Ayam AK (M) Sdn. Bhd. Bukit Mertajam

	- Manzr Holdings Sdn. Bhd. Bukit Mertajam - Nafas Food Processing & Marketing Sdn. Bhd. Sungai Bakap - Ayamplus Food Corporation Sdn. Bhd. Nibong Tebal - Puyuh Mutiara Enterprise, Kepala Batas - Rumah Sembelih Ruminan, Seberang Perai - LTC Ayam Sdn. Bhd. Simpang Ampat
Perak	- NTKK Poultry Processing Sdn Bhd. Ipoh - Perniagaan Ayam Daging Yew, Seri Manjung - Ayam Suria (Ipoh) Sdn. Bhd. Gopeng - Perniagaan A Yammie, Chemor - Ayam Srijati, Ipoh - Gemilang Bestari Sdn. Bhd. Ipoh - Harumi Brands Sdn Bhd. Sitiawan - PCK Processing & Marketing Sdn. Bhd. Seri Manjung - Perak Duck Food Industries Sdn. Bhd. Taiping - F.Y. Sdn. Bhd. Chepor - Sin Eng Kee Enterprise, Menglembu - Pusing Ria Sdn. Bhd. Pusing - Smart Food Venture Networking Sdn. Bhd. Sitiawan - Kompleks Abatoir Ipoh, Jabatan Perkhidmatan Veterinar - Hazol PLT, Kampung Gajah - Kompleks Abatoir Teluk Intan, Jabatan Perkhidmatan Veterinar
Selangor	- Al Freshken Global Sdn. Bhd. Puchong - Amza Resources Sdn. Bhd. Puchong - Ayamas Food Corporation Sdn. Bhd. Pelabuhan Klang - Aufa Foods, Kajang - Pelangi Processing Sd Bhd Pelabuhan Klang - Pertubuhan Peladang Negeri Selangor, Pelabuhan Klang - Good Poultry Sd Bhd, Kajang - Mumtaz Meat & Marine Foods Sdn. Bhd, Semenyih - Veteran Pvkpdm (Ayam Segar) Sdn. Bhd. Semenyih - Sentosiah Sdn. Bhd. Puchong - Lay Hong Food Corporation Sdn. Bhd, Tanjong Karang - Sri Segar Food Corporation Sdn. Bhd. Shah Alam - Rumah Sembelih, Shah Alam - Jabatan Perkhidmatan Veterinar, Kompleks Abatoir Banting
Wp Kuala Lumpur	- Dindings Poultry Processing Sdn Bhd - Leong Hup Agrobusiness Sdn Bhd
Melaka	- Poultec Enterprise Sdn. Bhd. Alor Gajah - Farm's Best Food Industries Sdn. Bhd. Masjid Tanah - Kompleks Abatoir Jasin, Jabatan Perkhidmatan Veterinar - MF Maju Processing Sdn. Bhd. Alor Gajah - Telic Farm Sdn. Bhd. Masjid Tanah - Ali Ahmad Bin Waris Ali, Alor Gajah - HLRB Processing Sdn. Bhd. Jasin - Hassan bin Muhammad, Jasin

Negeri Sembilan	1. Era Bumi Ayam Segar, Rembau 2. Arah Warga Sdn. Bhd. Seremban 3. Farmiera Processing Sdn. Bhd. Port Dickson 4. Kerabat Processing House (Pedas) Sdn. Bhd. Rembai 5. Wan Ismail & Family Enterprise, Seremban 6. Pk Agroindustrial Products (M) Sdn. Bhd. Senawang 7. Masterly Food Industry Sdn. Bhd. Seremban 8. Gemesta Puyuh Enterprise, Linggi 9. Delima Emas Sdn. Bhd. Nilai 10. Sumobek Sdn. Bhd. Seremban 11. Muziera Enterprise, Jelevu 12. East Asia Rabbit Corporation Son. Bhd. Lenggeng 13. Rumah Sembelih Kuala Pilah, Jabatan Perkhidmatan Veterinar 14. Kompleks Abatoir Senawang, Jabatan Perkhidmatan Veterinar
Pahang	1. Selera Maju Rompin, Kuala Rompin 2. Azam Niaga Enterprise, Kuala Rompin 3. Azman Bin Mat Tahar, Kuala Rompin 4. Murni Chek Long Enterprise, Rompin 5. Syed Kharuladzha Bin Syed Abdul Aziz, Kuala Rompin 6. Abidin Bin Hashim, Kuala Lipis 7. Rezeki Ningcih Enterprise, Kuala Lipis 8. D Smart Trading, Jerantut 9. Rumah Sembelih Hj Adam Sdn. Bhd. Muadzam Shah 10. Khairun Nizam Bin Salehuddin, Jerantut 11. Ladang Kampbaru, Jerantut 12. D&L Timur Enterprise, Kuantan 13. STC Poultry Processing Sdn. Bhd. Kuantan 14. Periniagaan Heng Wang, Kuantan 15. Jaya Gading Farm Son Bhd, Kuantan 16. Syamidi Enterprise, Jerantut 17. Rumah Sembelih Ruminan, Jabatan Perkhidmatan Veterinar Temerloh 18. Rumah Sembelih Bentong, Jabatan Perkhidmatan Veterinar Bentong 19. Rumah Sembelih Kuantan, Jabatan Perkhidmatan Veterinar Malaysia 20. Rumah Sembelih Kuala Lipis, Jabatan Perkhidmatan Veterinar 21. Rumah Sembelih Raub, Jabatan Perkhidmatan Veterinar
Terengganu	1. Musalmah Farm Sdn Bhd Kuala Terengganu 2. Hda Poultry Sdn. Bhd. Kuala Terengganu 3. Kompleks Abatoir Dungun, Jabatan Perkhidmatan Veterinar
Kelantan	1. Ayam Putih Sdn. Bhd. Kota Bharu 2. Azam Ternak Sdn. Bhd. Kota Bharu 3. PG Lean Hwa Trading Sdn. Bhd. Sungai Jawi 4. Kompleks Abatoir Machang, Jabatan Perkhidmatan Veterinar

	5. Azmi Murni Resources Darul Saadah, Kota Bharu 6. IQ Agro Farm, Kota Bharu 7. Lepad Jaya Food Sdn. Bhd. Gua Musang 8. Kompleks Abatoir Pasir Mas, Jabatan Perkhidmatan Veterinar
Johor	1. Wilayah Food Trading Sdn. Bhd. Pontian 2. Mars Global Sdn. Bhd. Bandar Indahpura 3. Nur Fnz Enterprise, Pontian 4. Kee Song Food (M) Sdn. Bhd. Pontian 5. Ayamlikes Food Processing Sdn. Bhd. Senai 6. Rumah Sembelih Johor Bahru, Jabatan Perkhidmatan Veterinar
Sarawak	1. Boh Ming Food Processing Industries Sdn Bhd, Jalan Tapah 2. Comerich Sdn Bhd, Kuching 3. Borneo Farm Sdn. Bhd. Miri 4. Yi Chin Trading Co, Jalan Penrissen 5. Beishi Trading Co. Sdn. Bhd. Kuching 6. Shin Yang Agriculture Sdn Bhd, Miri 7. Siak Liang Enterprise Sdn Bhd, Kota Samarahan 8. QL Livestock Farming Sdn. Bhd. Rock Road 9. Chicwan Trading Sdn Bhd. Bintulu 10. PPESTernak Sdn. Bhd. Serian 11. Central Coldstorage Kuching Sdn. Bhd. Kuching 12. K&L Farming Industries Sdn. Bhd. Kuching 13. Ayam Champion Food Sdn. Bhd. Kota Samarahan 14. Yeung Lok Cold Storage Sdn. Bhd. Serian Road 15. Satoyama Farm & Construction Sdn. Bhd. Kuching
Sabah	1. Rastamas Cold Storage Sdn. Bhd. Tawau 2. Sawit Kinabalu Farm Products Sdn. Bhd. Tawau 3. CCK Fresh Mart Sdn Bhd. Kota Kinabalu 4. Eng Peng Cold Storage Sdn. Bhd. Kota Kinabalu 5. In-Pro's Coldstorage Marketing (T) Sdn. Bhd. Tawau 6. QL Agroventures Sdn. Bhd. Putatan 7. Pertubuhan Peladang Negeri Wilayah Persekutuan, Labuan

In 2022, the stock of chicken in Malaysia amounted to more than 302 million heads. This indicates an increase from around 293 million in the previous year. Chicken stocks have risen during the previous decade. This steady increase in chicken stock over the past decade highlights the growing demand for poultry in Malaysia. The upward trend reflects the industry's ability to meet consumer needs while ensuring food security and sustainability (Hasnul et al., 2015).

The slaughterhouse in Malaysia follows strict halal guidelines to ensure that the chickens are slaughtered in a humane and Islamic manner. The chicken was slaughtered by a skilled and trained Muslim slaughterman who recited the *tasmiyah* and performed the necessary procedures to ensure that the chicken was halal to consume (Abdallah et al., 2021; Shahdan et al., 2016).

After slaughter, the chickens undergo further processing, including defeathering, evisceration, and portioning, before being packaged for distribution to retailers and consumers (Nazri et al., 2012). Throughout the supply chain, strict hygiene and halal compliance measures are enforced, ensuring that the integrity of halal certification is maintained. Regular inspections, audits, and traceability systems are in place to monitor every stage, from farm to fork, guaranteeing that the poultry remains safe, hygienic, and fully compliant with halal standards (Halaseh & Sundarakani, 2012; H. Y. Lee et al., 2019).

In conclusion, the halal poultry industry in Malaysia is vital for this country's economy and plays a significant part in providing halal food to the Muslim population. The whole halal supply chain including the farms and the slaughterhouses is subject to strict regulations and guidelines to ensure that the chickens are safe and halal to consume (Emi Normalina et al., 2011; Shahdan et al., 2016).

2.6.1 Halal Regulatory Systems in The Halal Poultry Industry in Malaysia

Due to the fragmentary characteristics of the legal provisions of halal, Malaysia's regulatory system for halal comprises several authorities. Halal-related issues are governed by several laws. However, those laws were developed for different government agencies with various rights and authorities. Even though the Trade Description Act of 2011's general provisions serve as the primary source for regulations on halal food and products, other laws, including the Food Act of 1983, the Animal Act of 1953, and the Customs Act of 1967, also to some extent control various aspects of halal in Malaysia (H. Hashim et al., 2019).

To serve as a guide for halal slaughtering procedures, a standard protocol has been created. The Department of Islamic Development Malaysia (JAKIM), the Department of Veterinary Services Malaysia (DVS), the Department of Standard Malaysia, the Ministry of Health, the Ministry of International Trade and Industry, and the Standards and Industrial Research Institute of Malaysia (SIRIM Berhad) were among the organisations represented on the committee that created the Malaysian Protocol for the manufacture of halal meat and poultry (Ramli, Rosman, Khan, et al., 2020). This protocol's publication aims to help manufacturers of high-quality halal goods implement the Malaysian Halal Standard, MS1500:2009 Halal Food Production Preparation, Handling and Storage-General Guidelines (Second Revision). In addition, this protocol offers basic instructions for adhering to halal standards in the production of meat, poultry, meat products, and poultry products along the whole supply chain.

At least three (3) government organisations directly control the activities associated with chicken slaughter. These three agencies have diverse regulatory responsibilities, as seen in Table 2.4, Halal authorities, particularly the JAKIM and the State Islamic Religious Council (MAINS/JAINs), are mainly in charge of regulating halal practice. However, the halal authority has only a limited amount of legal power to supervise and regulate the actions that take place in the chicken slaughtering and processing facilities. For only those facilities having the halal certification, the halal authority performs its full control and monitoring functions. While this is going on, the halal authority is unable to exercise effective supervision over other locations since they do not have halal certification. To assist the control and monitoring process in poultry facilities, various agencies with different legal capacities are required. These organisations are the Local governments and the Department of Veterinary Services.

Table 2.4 Regulatory bodies in Halal poultry operations

Regulatory Bodies	Statutory Provision	Level of Enforcement	Scope of the Regulation
JAKIM and MAINs	Trade Description Act 2011	Federal	Halal Definition and Halal Marking
Department of Veterinary Services	States' Enactment of Poultry Farming	States	Food Safety of Animal Origin
Local Government	Local Government Act 1976	Local Government	Business Premise Licenses

JAKIM and MAINS/JAINs are the halal authorities responsible for monitoring and controlling halal practices in the industry. They have the legal authority to certify premises with halal certification and enforce halal requirements. These bodies ensure that the slaughtering and processing of poultry adhere to strict halal standards.

The Department of Veterinary Services plays a crucial role in regulating the overall safety and hygiene aspects of poultry slaughtering premises. They provide permits and licenses for businesses to operate and monitor their activities to ensure compliance with safety requirements, including halal aspects.

The local government, specifically the responsible authority for licensing business premises, also plays a role in controlling and monitoring poultry slaughtering premises. They work in coordination with the halal authorities and the Department of Veterinary Services to ensure compliance with halal standards.

Overall, the current regulatory system in Malaysia contributes to halal compliance in the poultry industry by providing guidelines, certification, monitoring, and enforcement mechanisms. However, it is important to note that securing halal compliance requires collective efforts and coordination between these regulatory bodies (H. Hashim et al., 2019).

2.6.2 Halal Assurance System (HAS)

Given the need for the food sector to create food that fully satisfies the halal management system and concept, a few initiatives were issued as part of JAKIM's development of the halal Malaysia idea. To make it mandatory for every application for a Halal Certificate associated with a multinational enterprise to adopt a Halal Assurance System in the manufacturing of halal products, the Department of Islamic Development Malaysia (JAKIM) launched an initiative in 2013. Additionally, players in the food business suggested developing this system, which would add value to halal management and boost customer confidence in halal food products (Ramli, Rosman, & Ajmain@Jima'ain, 2020; Ramli, Rosman, Md Sikin, et al., 2020).

JAKIM established the main guidelines of the Halal Assurance System, also known as HAS, to meet the requirements of the Halal Standard Certification System and to ensure the system itself is effective in controlling a comprehensive halal system beginning with the "source to the point of consumer purchase" concept. As a result, to fulfil the requirements for a Halal Certificate and the certification of halal integrity, the industrial party had to provide HAS procedures. The development of a control centre, where every procedure and step would be painstakingly examined following the HAS idea in the manufacturing concept for halal *tayibban* food (HT), was the primary aspect that needed to be established (Kadir et al., 2016; Ramli, Rosman, Khan, et al., 2020).

2.6.3 Halal Certification for the Poultry Industry

Halal certification especially for slaughterhouses is a process to certify and confirm the halalness of slaughter products produced. This process is carried out to confirm that the products produced have met the requirements of quality assurance, quality-related legislation as well and other minimum requirements other than halal aspects. Slaughterhouse is one of seven halal certification schemes that are open to any slaughterhouse product operators in the country who want to obtain the Malaysian Halal Certification Certificate. Halal certification of slaughterhouses is assessed under the

food product category and also uses the MS1500:2009 Halal Food-Production standard, Preparation, Handling and Storage-general Guideline (2nd Revision) and Malaysian Protocol for the Halal Meat and Poultry Productions.

Halal certification for slaughterhouses is divided into three categories which are small, medium and big which can be seen in table 2.5 below. The division of this category is based on the amount of the daily slaughter. The halal certificate application fee will also depend on the slaughter capacity of a slaughterhouse. A small category for poultry is where the slaughter ranges from one to 2,999 poultry per day. For the medium category, the number of poultry ranges from 3,000 to 10,000 poultry per day. The third category is a large category where the daily slaughter results range over 10,000 poultry per day (JAKIM, 2020). Here are the details of each category mentioned above.

Table 2.5 Category of the slaughterhouse. Source: (JAKIM, 2020)

Scheme	Category			
	Size of the premise	Types of animals	Daily Production	Yearly Fee (RM)
Halal Slaughterhouse	Small	Chicken or other types of poultry or rabbit	1-2,999	100
		Goat, Sheep or deer	1-499	
		Cow, Buffalo or camel	1-49	
	Medium	Chicken or other types of poultry or rabbit	3,000-10,000	400
		Goat, Sheep or deer	500-700	
		Cow, Buffalo or camel	50-100	
	Big	Chicken or other types of poultry or rabbit	More than 10,000	700
		Goat, Sheep or deer	More than 700	
		Cow, Buffalo or camel	More than 100	

Table 2.6 below categorizes the Halal poultry industry into two main segments: Small and Micro Industries, and Big and Medium Industries. Each category adheres to specific halal compliance measures to ensure the integrity of Halal poultry products.

For Small and Micro Industries, halal compliance is primarily managed through an Internal Halal Committee (IHC), which focuses on key aspects such as halal policy, raw material control, and traceability. In contrast, big and medium Industries follow a more comprehensive Halal Assurance System (HAS) that includes a structured approach to halal management. This system involves appointing a halal executive, conducting internal halal audits, implementing risk control measures, and ensuring proper documentation and laboratory testing. Additionally, these industries establish training programs, develop product recall procedures, and enforce strict traceability measures to maintain halal integrity throughout the supply chain.

Table 2.6 The category for the halal poultry industry. Source: (JAKIM, 2020)

Category of Small and Micro Industry	Category of Big and Medium Industry
Internal Halal Committee (IHC)	Halal Assurance System (HAS)
1. Halal policy 2. Control of raw material 3. Traceability	1. Halal Policy 2. Appointment of Halal Executive 3. Internal Halal Committee 4. Halal Risk Control 5. Raw Material Control 6. Internal Halal Audit 7. Training program 8. Traceability 9. Implementation of control measures 10. Laboratory lab analysis 11. Development of product recall procedure 12. Documentation system and management of records

There are around 140 halal-certified slaughterhouses in Malaysia. This shows a good increase in the number of halal-certified slaughterhouses in Malaysia for the past ten years and a significant increase in halal industry in this country.

Therefore, the halal certification application procedure must be quick to accommodate more applications while also making it easy for everyone to apply. The Halal Development Corporation Bhd. (HDC) intends to create a new digital platform

for halal certification, in accordance with the government's goal in Budget 2024 to reduce the processing time from 51 to 30 days. Chairman Khairul Azwan Harun stated that by integrating existing apps and processes, the new platform will assist speed up the process from pre-certification to approval and post-certification. HDC, in collaboration with the Malaysian Islamic Development Department (JAKIM), will spearhead efforts to streamline the overall halal certification process, particularly for halal product exporters. HDC will collaborate closely with JAKIM and other authorities to accelerate the process of boosting the trade value of Malaysia's halal product exports to the global market and expanding the total number of exporting enterprises with halal certifications (Bernama, 2023).

Figure 2.2 illustrates the step-by-step process for obtaining Halal certification in Malaysia, starting from account registration to final monitoring. This structured approach ensures that businesses comply with stringent halal standards set by JAKIM (Department of Islamic Development Malaysia), reinforcing Malaysia's reputation as a global leader in halal certification.

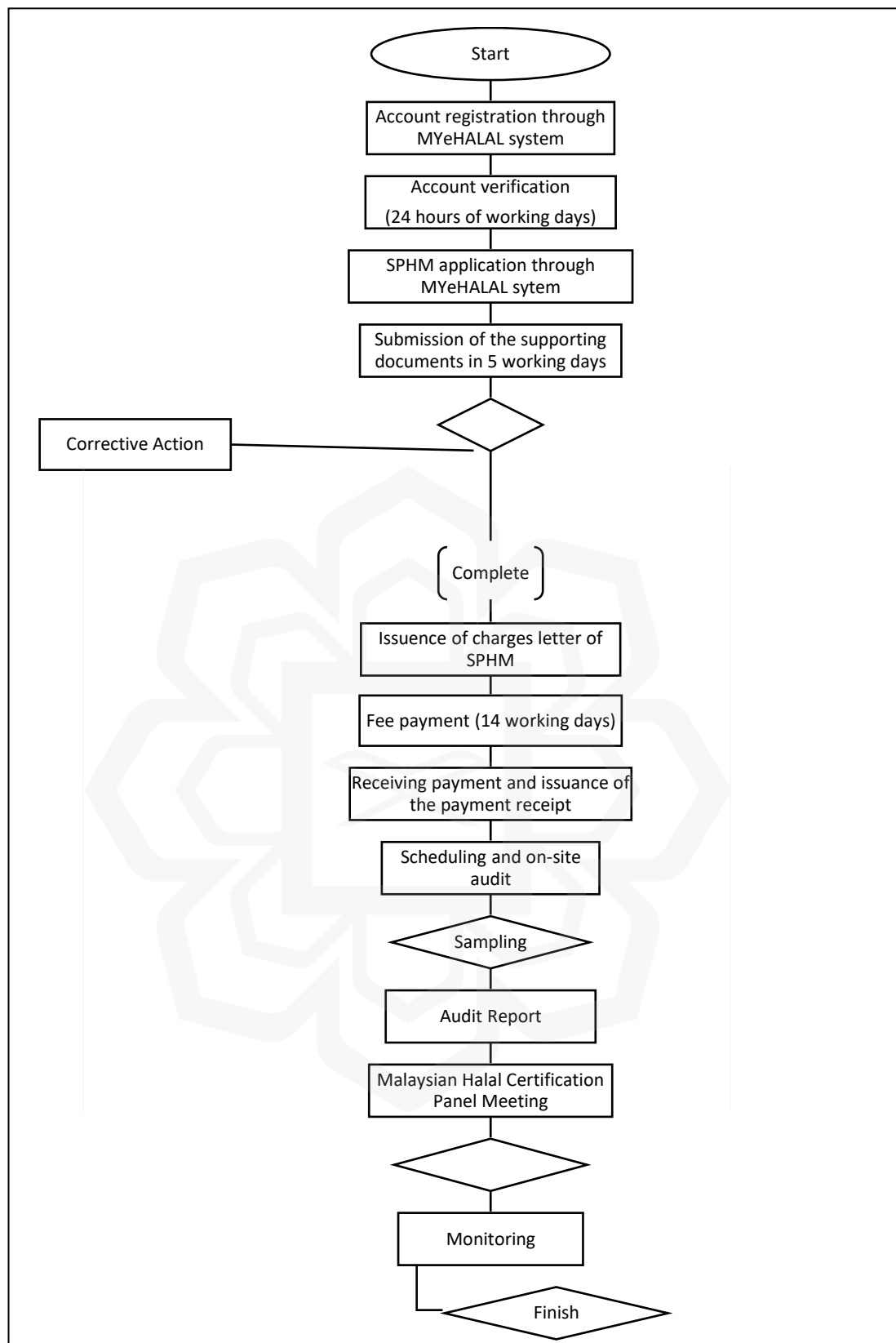


Figure 2.2 Halal Certification Process

The process begins with account registration through the MYeHALAL system, an online platform designed to streamline applications. Once an account is created, verification takes place within 24 working hours, allowing businesses to proceed efficiently. Following this, applicants must submit their Malaysia Halal Certification (SPHM) application through the same system. This submission is accompanied by supporting documents, which must be provided within five working days. At this stage, if any discrepancies or incomplete documentation are identified, corrective action is required before the process can move forward.

Once the application is deemed complete, JAKIM issues an SPHM charge letter detailing the necessary certification fees. Applicants must make the payment within 14 working days, after which a receipt is issued, signifying the formal acceptance of their application. Following this, an on-site audit is scheduled, where auditors assess the business's compliance with halal standards. This stage involves rigorous checks, including product sampling and evaluations of raw materials, production processes, and hygiene standards. The findings from the audit are then compiled into a comprehensive report, which is later reviewed by the Malaysian Halal Certification Panel.

The certification panel plays a crucial role in determining whether the applicant meets all halal requirements. If the audit results are satisfactory, the business is granted halal certification. However, the process does not end there, as continuous monitoring is implemented to ensure that compliance is maintained over time. Businesses must adhere to all halal integrity standards throughout their operations, reinforcing consumer trust in the certification system.

Malaysia's halal certification framework is widely recognized as one of the most structured and credible in the world. However, despite its strengths, there is room for improvement. One key challenge is the processing time, particularly for small and medium enterprises (SMEs), which may face difficulties in meeting certification requirements promptly. Additionally, further digitalization of the application process could enhance efficiency, particularly in areas such as document verification and audit scheduling. Efforts to harmonize Malaysia's halal certification with international halal standards would also strengthen global recognition and market access for certified businesses.

By continuously refining its certification process, Malaysia can further solidify its reputation as a global leader in halal integrity. The structured approach ensures that halal compliance is upheld at every stage, fostering consumer confidence and positioning Malaysia as a benchmark for halal certification worldwide.

As the global halal industry continues to grow, understanding and navigating the halal certification processes are crucial for companies within the poultry supply chain to thrive in the evolving marketplace. The halal certification process significantly impacts the poultry supply chain in Malaysia. It protects the halal integrity system and influences customer trust, market access and economic growth. Halal certification also serves as the bedrock for ensuring compliance with Islamic principles. While it presents challenges, the impacts are undeniably huge. Balancing these intricate processes with technological innovation and support for SMEs especially will be crucial for the industry's sustained growth and success. Understanding the importance of the halal certification system will be important for the industry to thrive in the future.

2.6.4 Challenges and Issues in The Halal Poultry Industry

The halal poultry industry plays a crucial role in ensuring that consumers, particularly Muslims, receive products that comply with Islamic dietary laws. However, the industry faces several challenges and issues that threaten the integrity of the halal supply chain. According to Hashim et al. (2019) some of the main challenges in ensuring halal integrity in Malaysia include limited legal authority, coordination between regulatory bodies, non-compliance in slaughtering processes, lack of awareness and education, as well as monitoring and enforcement issues.

One of the key challenges in the halal poultry industry is the limited legal authority of regulatory bodies. While Malaysia has established a strong halal certification framework through agencies like the Department of Islamic Development Malaysia (JAKIM), the enforcement of halal regulations is often constrained by jurisdictional limitations. Some aspects of poultry production, such as feed sources,

transportation, and retail sales, fall under the purview of multiple government agencies, leading to inefficiencies and inconsistencies in enforcement. This lack of comprehensive legal authority creates gaps in the halal certification process, potentially allowing non-compliant practices to persist (H. Hashim et al., 2019; Zaina et al., 2015).

The halal poultry industry requires a well-coordinated approach among various stakeholders, including government agencies, certification bodies, industry players, and consumers. However, coordination between these entities is often lacking, resulting in fragmented oversight and inconsistent enforcement of halal standards. For example, JAKIM oversees halal certification, while the Ministry of Agriculture and Food Security regulates poultry farming, and the Ministry of Health is responsible for food safety. The absence of a unified regulatory framework can lead to inefficiencies and delays in addressing compliance issues.

Another significant challenge in the halal poultry industry is non-compliance in slaughtering processes. Islamic dietary laws require that poultry be slaughtered by a Muslim, using a sharp knife to ensure a swift and humane process, and invoking the name of Allah before slaughtering (Shahdan et al., 2016a; Sulieman et al., 2014). However, cases of improper slaughtering methods have been reported, including mechanical slaughtering without proper supervision, stunning practices that may lead to the death of the animal before slaughter, and contamination of halal and non-halal products due to poor handling practices. Such non-compliance threatens the trust of consumers in halal-certified products and undermines the credibility of the halal certification system (Chandia & Soon, 2018; Jalil & Qamar, 2019a).

A lack of awareness and education among industry players and consumers further exacerbates the challenges in the halal poultry industry (Manzouri et al., 2013; Prayuda et al., 2023; Wahida et al., 2017). Many poultry farm operators, slaughterhouse workers, and food handlers may not fully understand the importance of adhering to halal principles. Insufficient training on halal requirements and improper handling of halal poultry can lead to unintentional violations of halal standards (H. I. C. Hashim & Shariff, 2016; Kassa et al., 2010). Similarly, consumers may lack knowledge about the halal certification process and the significance of proper halal compliance, making them vulnerable to misleading claims and fraudulent halal labels (Davidson et al., 2017).

Effective monitoring and enforcement are essential to maintaining halal integrity in the poultry industry. However, limited resources, inadequate manpower, and logistical challenges hinder the ability of regulatory bodies to conduct regular inspections and audits. The rapid expansion of the poultry industry, coupled with the complexity of supply chains, makes it difficult to track and verify compliance at every stage of production. Weak enforcement mechanisms also allow unscrupulous businesses to exploit loopholes and engage in fraudulent halal certification practices, further eroding consumer trust (Ab Talib & Mohd Johan, 2012; Haleem et al., 2019; Muhammad Asyraf et al., 2023; Sham et al., 2017).

The halal poultry industry in Malaysia faces several challenges that threaten its integrity, including limited legal authority, poor coordination between regulatory bodies, non-compliance in slaughtering processes, lack of awareness and education, and inadequate monitoring and enforcement. Addressing these issues requires a multi-faceted approach involving stronger regulatory frameworks, better coordination among stakeholders, enhanced training programs, and improved monitoring mechanisms. By overcoming these challenges, Malaysia can strengthen its position as a global leader in the halal industry and ensure that halal poultry products meet the highest standards of quality and compliance.

2.7 EXPLORING THE HALAL INTEGRITY DIMENSION

Halal integrity is the result of an operation inside the food supply chain. Contrary to popular belief or assumption, halal encompasses more than only food and food items. It comprises all facets of a Muslim's life. The concept of halal integrity is based on the belief that each Muslim must have access to things that are acceptable, permissible, and acceptable from a religious standpoint (M. H. Ali, Zhan, et al., 2017; Davidson et al., 2017). As a result, the term "halal" refers to any Islamic *Shari'ah* compliant good, starting with food and beverages, banking and finance, travel, cosmetics, pharmaceuticals, work, travel, technology, and transportation services, among other things. Halal is not only an obligation for all Muslims, but it is also a crucial and

fundamental value in Islam. Every Muslim must consume halal goods, including food and everyday necessities.

To maintain the integrity of a halal product, other words, physical and ethical standards should be included in the full chain of manufacturing activities to keep the concept's holistic principle (Ngah et al., 2014). As a result, the fundamental components of halal product integrity have been investigated from the perspectives of physical and moral integrity based on the Islamic values related to the idea. Thus, the researcher will explore the halal integrity dimension in every phase of the halal poultry supply chain from farm to fork. Thus, halal integrity may be defined in terms of these four fundamental dimensions; pure, hygiene, safety, and quality (Norasekin, 2016; Ramli, Rosman, Khan, et al., 2020).

2.7.1 Pure

The concept of "halal" in Islamic dietary laws signifies purity and adherence to religious guidelines, ensuring that food is free from prohibited substances and prepared in accordance with Islamic jurisprudence (Riaz & Chaudry, 2004). Halal food must be devoid of impurities (*najis*), including blood, urine, and feces, and should not come into contact with prohibited animals or substances (Alzeer et al., 2018). The integrity of halal food is crucial in maintaining its permissible status for Muslim consumers (Bonne & Verbeke, 2008).

The Quran explicitly outlines four main categories of prohibited (haram) food: carrion (dead animals), blood, pork, and animals sacrificed in the name of deities other than Allah (Quran 2:173). These prohibitions are reinforced in Islamic jurisprudence and serve both religious and health-related purposes (Qardhawi, 1993).

إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنْزِيرِ وَمَا أُهِلَّ لِغَيْرِ اللَّهِ بِهِ فَمَنْ اضْطُرَّ
غَيْرَ بَاغٍ وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ إِنَّ اللَّهَ غَفُورٌ رَحِيمٌ

Translation: *He has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah. But whoever is forced (by necessity), neither desiring (it) nor transgressing (its limit), there is no sin upon him. Indeed, Allah is Forgiving and Merciful.*

Surah al-Baqarah (2): 173

Animal that dies naturally (carrion without being slaughtered) are considered haram. The prohibition is based on both religious obligations and hygiene concerns, as the decomposition of carcasses can lead to contamination and health risks (Ambali & Bakar, 2014). Slaughtering ensures that animals are consciously prepared for consumption, reflecting human effort and intention.

Flowing or gushing blood is forbidden due to its potential health hazards. Blood serves as a medium for bacteria and toxins, making its consumption unsafe (Riaz & Chaudry, 2004). Additionally, the Islamic ruling discourages harming live animals through blood extraction (Bonne & Verbeke, 2008).

The prohibition of pork is explicitly stated in Islamic teachings, largely due to health concerns. Scientific studies have demonstrated that pork may carry harmful parasites, including *Trichinella spiralis*, which can cause *trichinosis*. Moreover, pigs are known to consume waste, leading to concerns about impurities in their meat (Riaz & Chaudry, 2004).

The act of slaughtering in the name of Allah signifies divine permission to consume meat. If an animal is sacrificed in the name of any entity other than Allah, it is considered impure and unacceptable for Muslim consumption (Al-Qaradawi, 2001). The recitation of *Bismillah* (in the name of Allah) during slaughtering is essential in maintaining the spiritual purity of the meat (Riaz & Chaudry, 2004).

Halal slaughtering involves precise methods to ensure humane treatment and religious compliance. The process must be performed by a mentally sound adult Muslim

who invokes Allah's name before slaughtering (Alzeer et al., 2018). The key principles of halal slaughtering include:

- i. Use of a Sharp Knife: A sharp blade minimizes animal suffering by ensuring a swift and efficient cut, facilitating rapid blood drainage (Riaz & Chaudry, 2004).
- ii. Invocation (*Tasmiyyah*): The recitation of *Bismillah Allahu Akbar* acknowledges Allah's sovereignty over life and death. Islamic scholars have varying opinions on whether unintentional omission of the invocation affects the permissibility of the meat (Al-Qaradawi, 2001).
- iii. Proper Blood Drainage: Ensuring complete blood removal aligns with Islamic guidelines, preventing the consumption of harmful substances (Bonne & Verbeke, 2008).

Islamic teachings emphasize the humane treatment of animals throughout their lives, from rearing to slaughtering. Proper handling, transportation, and slaughtering methods contribute to maintaining halal integrity (Ambali & Bakar, 2014). While stunning methods are widely accepted in some regions, the practice must not cause the animal's death prior to slaughtering, as seen in certain European countries where pre-slaughter stunning is deemed non-compliant with halal requirements (Riaz & Muhammad M. Chaudry, 2004).

The principle of purity (*taharah*) is central to the halal concept, ensuring that food consumed by Muslims adheres to Islamic guidelines and is free from impurities. The prohibition of specific food categories and the adherence to proper slaughtering practices reinforce the religious, ethical, and health aspects of halal consumption. As halal food regulations continue to evolve, maintaining integrity in the halal supply chain remains a crucial aspect of ensuring compliance with Islamic dietary laws.

2.7.2 Hygiene

Hygiene and cleanliness are fundamental principles in Islam, as they form the basis of both physical well-being and spiritual purity. The emphasis on hygiene is well-documented in Islamic jurisprudence and prophetic traditions. (Qardhawi, 1993), in *Al-Halal wal Haram fi al-Islam*, discusses the significance of cleanliness, highlighting that Islam dedicates substantial attention to hygiene as it is the foundation of beauty and human dignity.

The Prophet's teachings emphasize various aspects of personal hygiene, including oral care, handwashing, hair maintenance, and cleanliness of clothing, homes, and public spaces (Al-Qaradawi, 1994). This focus is reflected in the fundamental Islamic practice of *salat* (prayer), which requires a Muslim to ensure that their body, attire, and prayer space are free from impurities (Saabiq, 1991). The mandatory practice of *wudu'* (ablution) before prayer further underscores the intrinsic relationship between cleanliness and worship in Islam (Quraishi & Kamali, 2000).

Islamic teachings also extend hygiene principles to food safety and public health. The Qur'an states:

يَا أَيُّهَا النَّاسُ كُلُوا مِمَّا فِي الْأَرْضِ حَلَالًا طَيِّبًا ۚ

Translation: "O mankind, eat whatever is on earth (that is) lawful and pure"

Surah al-Baqarah (2): 168

This verse reinforces the dual requirement that food must not only be *halal* (lawful) but also *tayib* (pure and wholesome). The concept of *tayiban* encompasses hygiene and health considerations in food production, processing, and consumption (Riaz & Chaudry, 2004). Ensuring hygiene in food production aligns with the objectives of *maqāsid al-Sharī'ah* (higher objectives of Islamic law), particularly in preserving life and health.

Hygiene, in the context of the halal supply chain, includes maintaining sanitary conditions in slaughterhouses, ensuring contamination-free food handling, and adhering to strict cleanliness protocols (Bonne & Verbeke, 2008). The integrity of halal food is contingent on the assurance that it remains free from filth (*najs*) and substances deemed impure under Islamic law (Jalil & Qamar, 2019).

From the above discussion, it is evident that Islam's emphasis on hygiene transcends personal cleanliness and extends to food safety, public health, and ethical consumption. The halal concept is deeply intertwined with hygiene and health, ensuring that what is consumed is not only permissible but also beneficial to human well-being. Consequently, maintaining hygiene is a crucial aspect of halal integrity and plays a vital role in the broader framework of Islamic dietary laws.

2.7.3 Safe

The concept of halal, as derived from the Quran, encompasses all aspects of human life, particularly food consumption. (Qardhawi, 1993) asserts that all food is deemed halal unless explicitly prohibited by Islamic teachings. The Quran provides clear guidelines on what is considered haram, stating:

إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنْزِيرِ وَمَا أُهِلَّ لِغَيْرِ اللَّهِ بِهِ فَمَنْ اضْطُرَّ
غَيْرَ بَاغٍ وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ إِنَّ اللَّهَ غَفُورٌ رَحِيمٌ

Translation: *He has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah. But whoever is forced (by necessity), neither desiring (it) nor transgressing (its limit), there is no sin upon him. Indeed, Allah is Forgiving and Merciful.*

Surah al-Baqarah (2): 173

According to this verse, meat consumption is strictly regulated in Islam, requiring that animals be slaughtered in the name of Allah. The process must adhere to prescribed Islamic guidelines, ensuring that only lawful methods are used. Furthermore, animals must be fed only permissible substances, ensuring the integrity of the halal food chain.

The Quran also explicitly prohibits the consumption of intoxicants, emphasizing their detrimental effects on individuals and society:

يَا أَيُّهَا الَّذِينَ آمَنُوا إِنَّمَا الْخَمْرُ وَالْمَيْسِرُ وَالْأَنْصَابُ وَالْأَزْلَامُ رَجْسٌ مِّنْ عَمَلِ
الشَّيْطَانِ فَاجْتَنِبُوهُ لَعَلَّكُمْ تُفْلِحُونَ

Translation: “O you believe, intoxicants and gambling, and idols and divining arrows are an abomination of Satan’s handiwork. Leave it aside in order that you may succeed”

Surah al-Maidah (5): 90

The prohibition of *khamr* (alcohol) extends beyond mere consumption; it encompasses its production, sale, and any financial gains derived from it. Islamic legal decrees are formulated with distinct objectives (*maqāṣid al-Sharī’ah*), which include the preservation of religion, life, intellect, progeny, and property. The prohibition of intoxicants aligns with these principles, as alcohol and other substances impair cognitive function, leading to social discord and health issues (Hanani & Safian, 2013).

In the same manner, the consumption of harmful liquids, such as poison and impure substances (*najs*), including flowing blood, urine, and milk derived from forbidden animals, is also prohibited due to their potential harm to human health (Shahabuddin et al., 2020).

One of the fundamental characteristics of the halal concept is safety (*tayyib*), which ensures that food is not only religiously permissible but also wholesome and free from harmful elements. In the context of the halal poultry supply chain in Malaysia, safety is maintained through rigorous halal certification and regulatory frameworks.

Malaysia has established a comprehensive halal assurance system, governed by the Department of Islamic Development Malaysia (JAKIM). The Malaysian Standard (MS) 1500:2019 outlines the general guidelines for halal food production, ensuring compliance with Islamic dietary laws and food safety regulations (Department of Standards Malaysia, 2019). These standard mandates that poultry must be slaughtered according to Islamic rites, with strict supervision to prevent cross-contamination with non-halal substances.

Additionally, the safety of the integrity in halal poultry supply chain is upheld through various measures, including:

- i. Traceability Systems – Implementing blockchain and digital traceability technologies to monitor the entire supply chain, from farm to table, ensuring authenticity and preventing fraud (Ahmad et al., 2022)
- ii. Halal Audits and Compliance Inspections – Regular audits and inspections conducted by JAKIM and other halal certification bodies is necessary to ensure the continuous consistency and quality of Halal products (Voak et al., 2023)
- iii. Ethical Animal Treatment – Ensuring that poultry is raised in humane conditions, fed with halal-certified feed, and slaughtered using approved Islamic methods (S. Abdul Rahman, 2017)

The halal concept in Islam is deeply rooted in safety, ensuring that food consumption aligns with religious, ethical, and health considerations. The prohibition of harmful substances, including intoxicants and impure elements, safeguards human well-being. In Malaysia, the halal poultry supply chain is stringently regulated to uphold these principles, incorporating modern technologies and strict certification standards to maintain halal integrity. As the global demand for halal food rises, Malaysia continues to serve as a leading model in halal assurance, ensuring that halal food remains pure, safe, and trustworthy.

2.7.4 Quality

In the context of the *halalan tayiban* supply chain, quality is defined as the consistent application of *halalan tayiban* principles across all supply chain activities, including sourcing, storage, transportation, processing, handling, and distribution. Ensuring quality in these processes is essential to maintaining the integrity of halal products and their compliance with Islamic law.

To preserve the quality and halal status of poultry products throughout the supply chain, strict segregation between halal and non-halal items must be enforced. This is particularly critical in preventing cross-contamination and ensuring the purity of halal-certified products (Kadir et al., 2016; Saifudin et al., 2018). Furthermore, animal welfare and food safety are paramount considerations in maintaining food quality. Studies have shown that ethical treatment of animals not only aligns with Islamic principles but also enhances consumer confidence in halal products (S. Abdul Rahman, 2017; M. M. Rahman et al., 2024). The increasing global demand for organic and ethically sourced poultry products underscores consumers' growing concern for animal welfare, a sentiment shared by both Muslim and non-Muslim consumers.

Given the significance of animal welfare, it is imperative to implement stringent welfare measures at farms and throughout the poultry distribution process. Proper handling practices at abattoirs and adherence to halal slaughtering procedures ensure compliance with *halalan tayiban* principles and contribute to superior meat quality (Aghwan et al., 2016). To further safeguard the halal integrity of poultry products, the use of dedicated transportation services is highly recommended. Research indicates that logistics systems specifically designed for halal goods improve operational efficiency and help maintain the *halalan tayiban* status of poultry products throughout the supply chain (Yunan et al., 2020).

The *halalan tayiban* framework underscores the importance of quality as a fundamental component of the halal concept. Quality assurance in the halal poultry supply chain is not only crucial for regulatory compliance but also for ensuring consumer trust and satisfaction. The halal market has evolved into a global standard that transcends religious boundaries, making food quality a critical factor for both Muslim

and non-Muslim consumers. As such, adherence to *halalan tayiban* principles especially in maintaining ingredient freshness, ethical sourcing, and stringent supply chain management reinforces halal as a benchmark for high-quality and safe food products (Bonne & Verbeke, 2008; Kamisah et al., 2018).

Additionally, the quality dimension in the halal integrity of poultry supply chain is upheld through various measures, including:

- i. **Feed Quality and Safety:** The quality of poultry feed directly impacts meat quality. Ensuring that feed is free from contaminants and meets halal requirements is essential. Studies highlight the importance of using high-quality, halal-certified feed to enhance poultry health and meat quality (M. Rahman et al., 2021).
- ii. **Farm Management and Biosecurity:** Implementing stringent biosecurity measures, such as disease control, vaccination programs, and proper hygiene practices, is crucial in maintaining poultry health and ensuring high-quality meat production (Alam et al., 2025).
- iii. **Halal Slaughtering Compliance:** Proper slaughtering methods, including humane handling and adherence to Islamic guidelines, play a significant role in maintaining the *halalan tayiban* status of poultry. Research indicates that stunning methods, bleeding efficiency, and post-slaughter handling impact both meat quality and consumer perception (Jalil & Qamar, 2019).
- iv. **Cold Chain Management:** Maintaining an effective cold chain is critical to preserving poultry meat freshness and preventing contamination. Proper refrigeration and transportation conditions ensure that meat remains within safe temperature limits, thereby upholding quality and safety (Yahya et al., 2016).
- v. **Dedicated Halal Logistics:** The use of specialized halal logistics, including dedicated storage and transportation for halal poultry products, helps prevent cross-contamination and ensures compliance with halal integrity standards (Omar, Jaafar, et al., 2013; Tieman & van Nistelrooy, 2014; Zulfakar et al., 2014)

In conclusion, the halal poultry supply chain necessitates a comprehensive quality management approach to uphold *halalan tayiban* standards. The integration of

dedicated logistics, strict segregation policies, and enhanced animal welfare measures ensures that poultry products meet the highest quality standards while maintaining their halal integrity. Future research should focus on developing innovative halal logistics solutions and exploring the economic impact of high-quality halal certification on consumer preferences and market growth (Rokshana Shirin Asa, 2017; Tieman & van Nistelrooy, 2014).

2.8 THE APPLICATION OF HALAL POULTRY

This study examined the current practices of Malaysia's halal poultry industry across three critical stages: production ex-ante, production in-process, and production ex-post. Each stage was analyzed in detail, focusing on key elements within the halal poultry supply chain.

2.8.1 Production Ex-Ante

Production ex-ante is essential in every halal supply chain system. In the halal poultry supply chain, this phase is called a pre-slaughter phase where a lot of things must be taken care of including halal animal feed, environmentally friendly farms and no animal mistreatment and cruelty.

In the system of the halal food supply chain, humans have to treat animals with the same respect and decency that Shariah law obligations. Throughout the full supply chain involved in the production of halal meat, it is strictly forbidden to mistreat or harm animals. When the animal arrives at the slaughterhouse, this includes the pre-slaughter management. Before being butchered, the animal must be respectfully unloaded from the truck, given plenty of rest, and unfettered access to water in the holding cages. It's crucial to feed animals for at least 12 hours before slaughter to prevent gastrointestinal tract germs from getting into the meat (Zainalabidin et al., 2019).

However, continuing to withhold food for more than 24 hours is not humane. Ante-mortem examination by a qualified veterinarian is highly useful in ensuring that the meat from animals slated for slaughter is suitable for eating. During the inspection, it will be possible to identify animals for traceability reasons, check for cleanliness, look for obvious abnormalities, and look for signs that the welfare of the animals is being jeopardized. To determine if an animal is fit for use and can produce safe meat for human consumption, the infectious or possible zoonotic illnesses of the animal will also be observed (M. H. Ali, Tan, et al., 2017).

Halal animal feed is vital to maintain good quality and safety for the animal. But a lot of issues regarding animal feed have been discussed currently in this country. The problems include genetically modified feed (GMF), feed containing non-Halal ingredients or filth, the development of pathogenic enteric microbes through antimicrobial resistance (AMR) bacteria in feed, the buildup of mycotoxin, dioxin, heavy metals, pesticides, and both medicated and non-medicated feed additives in poultry meat and eggs, as well as physical risks in farming areas (Mohd Ashraf & Abd Rahman, 2018). Thus, providing good quality animal feed is crucial in this phase.

2.8.2 Production in Process

Production in process is one of the most vital key phases in the halal poultry supply chain. Which includes the halal slaughtering process. Figure 2.3 below showed the slaughtering part which include the trachea (*halqum*), oesophagus (*mari'*) and both carotid arteries and jugular veins (*wadajain*) must all be restrained and severed during the halal slaughtering process. Animals must be alive when they are slaughtered, and the act must follow *niyyah*, which is the intention in the name of Allah. The slaughtering knife must be clean and sharp such that only one "sawing movement" is required to complete the slaughtering procedure, according to the Malaysian Protocol for Halal Meat and Poultry Production by JAKIM (H. Hashim et al., 2019).

According to several studies, the halal cut, which involves severing the neck while the animal's heart is still beating and causing significant blood, is advantageous for extending the meat's shelf life and maintaining its quality. Using a sharp knife to conduct a cut in the main blood arteries promoted fast bleeding, resulting in larger volumes of blood loss, lowering product decomposition, and extending the meat's shelf life. Poor bleeding in the animals and more blood left behind after slaughter will reduce the quality, which will influence the meat's appearance and taste (Benzertiha et al., 2018; Sabow et al., 2017).

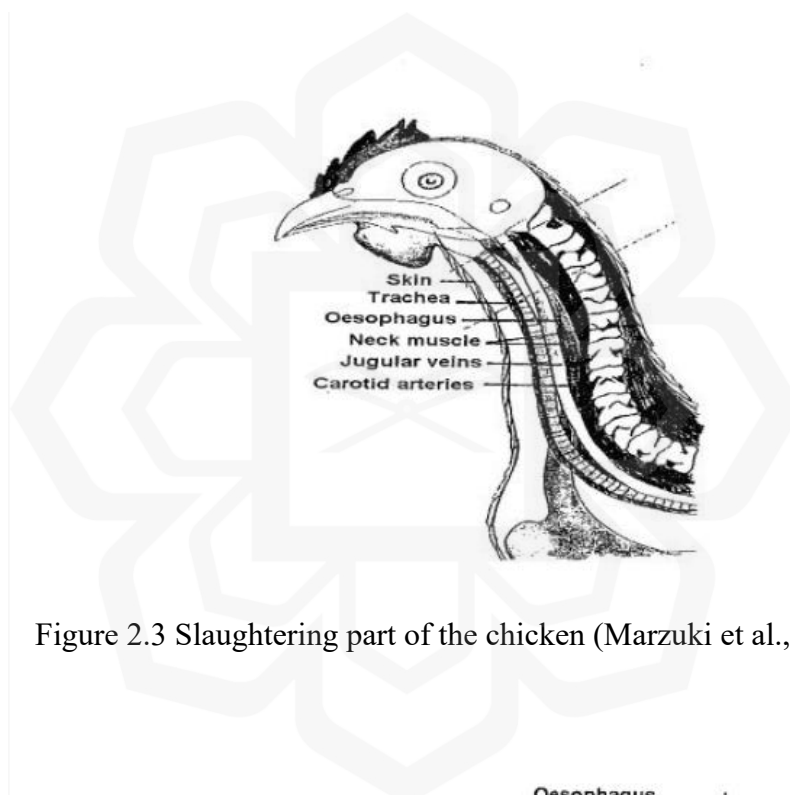


Figure 2.3 Slaughtering part of the chicken (Marzuki et al., 2012)

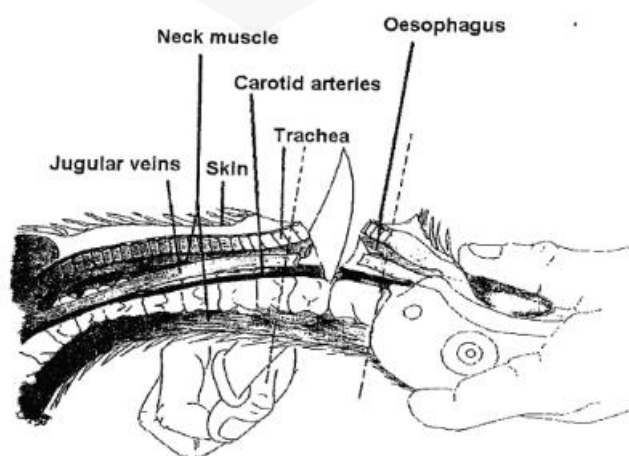


Figure 2.4 Methods of slaughtering chicken

According to (Marzuki et al., 2012), non-Muslims may view animal killing as harsh because believing that it may cause suffering and bleeding to death. However, the Islamic slaughtering method indicates that the knife used must be exceptionally sharp to make a swift, deep and clean cut through the critical anatomy of the chicken's neck. The target area must be at the trachea, oesophagus and major blood arteries. For animal welfare concerns, the knife should not be sharpened in front of the animal (Al-Teinaz et al., 2020).

During halal slaughter, an instantaneous cutting of the neck veins causes brain ischemia and makes the animal painless. This procedure causes fast blood loss from the animal's body. Bleeding also assures that the meat is high-quality. Figure 2.4 above showed the methods of slaughtering the chicken which the jugular vein and oesophagus are being cut with a single sharp knife stroke, interrupting the flow of blood to the brain and rendering the animal comatose almost instantly. It should be noted that the guidelines for halal slaughter are being complied which are properly draining the animal's blood while avoiding needless pain (Riaz et al., 2021).

2.8.3 Production Ex-Post

Production ex-post is one of the key phases in the meat business that will affect the quality of the meat. At this point, the meat product's shelf life and sanitary upkeep are crucial. The *tayiban* (wholesomeness) part of the halal system, which addresses nutrition, quality, cleanliness, and product safety, requires that the meat be free of any microbiological, physical, and chemical risks (Zainalabidin et al., 2019).

To prevent cross-contamination, the meat must be handled and processed in a clean environment following the slaughtering process. This is so that the meat's quality may be maintained by lowering the possibility that it will become infected by microbiological hazards like *Salmonella* spp (Luber, 2009). Additionally, the meat must be properly preserved in a dedicated space, such as a frigid or chilly chamber with a comfortable temperature. To avoid temperature abuse, which can promote microbial

development, even the transportation storage needs to be watched. In this way, the meat's quality might be preserved while having a longer shelf life. To protect the integrity of the halal food supply chain, the danger of possible harm at every stage, from processing to transportation, must be removed.(Rebezov et al., 2024)

2.9 OPPORTUNITIES FOR ENHANCING HALAL FOOD SUPPLY CHAIN INTEGRITY

Opportunities that enhance halal food supply chain integrity consist of four which are halal government regulations and oversight, halal traceability and transparency, industry collaboration and best practices and consumers' confidence and educations.

2.9.1 Government Regulations and Oversight

Currently, the idea of halal has gained international recognition as a new trademark. A certification trademark is different from an ordinary trademark in that the former offers a guarantee that the products and services have met specified conditions (Rokshana & Ida Madieha, 2011). A product's halal certification guarantees that it complies with Islamic dietary requirements and that it contains all of the ingredients that are allowed. It also serves as a sign of value, health, and ecosystem.

Nowadays, industries must have their products labelled with halal certification to differentiate them from other products on the market. Halal certification ensures customer satisfaction and certainty (T.-R. Lee et al., 2023). Furthermore, it demands not just that the food provided be halal, but that the entire procedure be halal as well. Halal-certified products need a high degree of hygiene as well as specific sanitation, safety, and nutrition criteria that meet the demands of customers, particularly Muslims. Malaysia is viewed as an advanced Muslim country on a global scale. It has the potential

to become a major producer of halal food items by leveraging the commitment and cooperation of both the government and local authorities.

Before obtaining a halal certificate, an organization must go through a series of steps. In general, the process will begin with the completion of an application form, which will explain the manufacturing process, detail the products to be certified, and list the ingredients used, as well as other relevant information about the manufacturing process and other products manufactured in the facility. Following that, a facilities audit will be conducted, and applicants will have to pay some fee if their application is approved (Artadita & Lestari, 2019).

2.9.2 Halal Traceability and Transparency

Traceability may be used to assess whether a certain food product is halal at any step in the production chain. It comprises all of the specifics of the procedures that halal food products went through, including those that occurred before the development of that particular food product, such as the origin of the ingredients or animals. Critical halal control points may be extensively monitored by implementing a traceability system, and if the product is suspected of being cross-contaminated with non-halal components, accurate information can be collected to assist in identifying the cross-contamination point and taking appropriate action.

In the halal food supply chain, a thorough and efficient traceability system could improve transparency and enhance integrity. Currently, nearly all available methods to determine the Halal status are unreliable, lacking in security, are not based on real-time data, and require more time to complete (Zainuddin et al., 2020). To create a trustworthy tool for Halal traceability, existing technology such as Radio Frequency Identification Devices (RFID), barcodes, and the Internet may be leveraged and modified.

2.9.3 Industry Collaboration and Best Practices

Enhancing the integrity status of the halal food supply chain requires building reliability and confidence among all parties engaged in the management of the flow of halal food items. Even if a company has a thorough and rigorous halal quality assurance system, all of these efforts would be useless if the parties involved in their direct supply chain dealings lacked trust and confidence in their ability to ensure that the food products they are providing are halal.

A specific level of dedication must also be demonstrated by the various parties to develop and strengthen the trust among stakeholders in the halal supply chain system. The amount of confidence and dedication of supply chain partners can be recognized, according to (Zulfakar et al., 2014) when both organizations are willing to expand their investment in asset specificity to meet the unique needs of their partners. Commitments such as providing specialised resources to meet the needs of halal clients, applying halal certification for raw materials and ingredients required by consumers, and sending employees to halal food handling-related training are examples of actions that can help improve the integrity of the halal food supply chain. All parties involved in the halal food supply chain can work together to protect and ensure that the integrity of halal food is at the highest level by demonstrating a high level of dedication.

Preventing the mixing of halal and non-halal items is the best strategy for maintaining the integrity of the halal religion throughout the supply chain, especially throughout the distribution phase. As a result of complete physical segregation, the halal items will be kept in a separate storage area whether it be a warehouse, a transit location, or a vehicle. Using the right tools to handle, store, and transport halal food goods would assist in maintaining their integrity since they are kept separate from other potential non-halal materials that might cross-contaminate them.

2.9.4 Consumer Confidence and Education

Educating consumers about the importance of halal integrity and the measures taken to ensure compliance is vital. This can be achieved through public awareness campaigns, clear labelling, and transparent communication about the halal certification process. Increased consumer awareness can drive demand for higher standards and greater accountability within the industry (Rejeb, 2018).

Effective consumer outreach starts with comprehensive public awareness campaigns (Firdaus Mohamad et al., 2019). These campaigns should educate consumers on what halal certification entails, the importance of halal integrity, and how to identify genuinely halal products. Utilizing mass media, social media, and community events can significantly broaden the reach. For instance, the government and private sector in Malaysia have actively carried out halal awareness campaigns to enhance consumer understanding and trust in halal products.

Educational programs and workshops targeted at different demographics can help deepen consumer knowledge (Osman et al., 2022). These programs can be integrated into school curriculums, community centers, and religious institutions. The focus should be on the halal certification process, the significance of halal dietary laws, and how consumers can ensure the products they purchase meet these standards.

Developing digital platforms and mobile applications can facilitate easy access to information about halal-certified products. These platforms can include features like scanning barcodes to verify halal status, detailed information on the halal certification process, and updates on newly certified products. This not only teaches consumers but also gives them the ability to make thoughtful purchases (Chang & Chen, 2020).

Enhancing the halal integrity of the poultry supply chain in Malaysia through consumer outreach and public disclosure is crucial for building and maintaining consumer trust. By implementing comprehensive public awareness campaigns, and educational programs, and leveraging digital platforms, consumers can be better informed about halal standards and practices. Transparent labelling, detailed supply chain transparency, and regular reporting further ensure that consumers have access to

reliable information about the halal status of poultry products. These strategies collectively contribute to a robust and trustworthy halal poultry supply chain in Malaysia.

2.10 ELEMENTS OF *MAQĀṢID AL-SHARĪ'AH* IN HALAL POULTRY

The concept of *maqāṣid al-Sharī'ah* (objectives of Islamic law) plays a pivotal role in the Islamic legal tradition, particularly in ensuring the alignment of legal rulings with the higher purposes of the Shariah. Defined as the ultimate goals and wisdoms that Islamic law seeks to realize, *maqāṣid al-Sharī'ah* center around the protection and promotion of human well-being in both worldly and spiritual dimensions. These objectives reflect the essence of divine wisdom embedded in the Shariah, which aims to achieve benefit (*maṣlaḥah*) and prevent harm (*mafsadah*) in all spheres of life (Auda, 2008).

The principles of *maqāṣid* are deeply rooted in Islamic jurisprudential thought and are grounded in the works of classical scholars such as Al-Ghazālī, Al-Shāṭibī, and Ibn 'Āshūr. Al-Ghazālī systematized the five essential objectives of Shariah: the preservation of religion (*dīn*), life (*nafs*), intellect (*'aql*), progeny (*nasl*), and wealth (*māl*) (Dusuki & Bouheraoua, 2010). These five objectives, also known as the *al-ḍarūriyyāt al-khams*, are considered essential for the sustenance of human life and the well-being of society. Al-Shāṭibī expanded the framework by incorporating the notions of necessity (*ḍarūriyyāt*), need (*ḥājjiyyāt*), and embellishment (*taḥsīniyyāt*), forming a hierarchical structure of *maqāṣid* that addresses various levels of human needs (Kamali, 2008).

The *maqāṣid* framework is categorized into three levels. The first and most essential category is *al-ḍarūriyyāt*, which encompasses the five foundational elements mentioned above. These are indispensable for the survival and stability of human life and society. The second level, *al-ḥājjiyyāt*, refers to complementary needs that aim to remove hardships and facilitate ease in life without being essential for survival. The

third level, *al-tahsīniyyāt*, includes enhancements that lead to refinement and moral excellence, such as cleanliness, modesty, and aesthetic values (Auda, 2008; Al-Qaradawi, 1995).

In the context of the halal poultry industry in Malaysia, the application of *maqāṣid al-Sharī'ah* provides a comprehensive ethical and legal framework to ensure integrity and public trust. The preservation of religion (*dīn*) is reflected in the adherence to proper Islamic slaughtering methods (*dhabh*), ensuring that poultry is slaughtered in accordance with the requirements of the Shariah. This includes invoking the name of Allah, using a sharp blade to minimize suffering, and ensuring the complete drainage of blood. These actions are crucial in maintaining the sanctity of Islamic dietary laws and enabling Muslims to fulfill their religious obligations (Rashid et al., 2016).

The protection of life (*nafs*) is equally significant in poultry practices. It encompasses both the humane treatment of animals and the health and safety of consumers. Ensuring animal welfare through ethical rearing, transportation, and slaughtering methods prevents unnecessary suffering and aligns with Islamic values of compassion. Furthermore, hygiene and food safety measures protect consumers from diseases such as avian influenza or salmonella, thus upholding the sanctity of human life (Bonne & Verbeke, 2008).

The safeguarding of intellect (*'aql*) is achieved by avoiding substances or practices that may impair cognitive function or mental clarity. In poultry production, this includes the prohibition of harmful additives, unethical feed components, or cross-contamination with non-halal materials. Clean and regulated processing environments contribute to the mental assurance of consumers, promoting informed and rational decision-making (Talib et al., 2015).

In terms of preserving progeny (*nasl*), the halal poultry industry contributes to the health and well-being of future generations. By providing nutritious, clean, and safe food, the industry supports the physical development of children and family members. Transparency in labeling and the prevention of food fraud are crucial in ensuring that Muslim families are not misled about the halal status of their food (Alserhan, 2020).

Lastly, the protection of wealth (*māl*) is addressed through fair business practices, transparency in halal certification, and prevention of economic exploitation. Fraudulent labeling and misrepresentation of halal status can result in financial loss and consumer distrust. Therefore, stringent certification and monitoring processes not only uphold ethical standards but also protect the economic interests of both producers and consumers (Tieman, 2011).

The pyramid of *maṣlahah* conceptualizes the *maqāṣid* in a hierarchical structure. At its base lies the *darūriyyāt* the essential interests followed by *ḥājiyyāt* the complementary needs and topped with *taḥsīniyyāt* the embellishments. This structure enables the industry to prioritize actions that are most critical for societal welfare while also striving for excellence and refinement in processes. By anchoring poultry supply chain practices within this pyramid, stakeholders can ensure not only halal compliance but also broader objectives of ethical conduct, community well-being, and environmental sustainability (Dusuki & Bouheraoua, 2011).

- i. Al-Ghazali (d. 1111 CE): He outlined the preservation of five essential aspects of human life as the primary objectives of *Sharī'ah*: religion (*dīn*), life (*nafs*), intellect (*'aql*), lineage (*nasl*), and property (*mal*) (Al-Ghazali, 1997).
- ii. Ibn Ashur (d. 1973 CE): He emphasized that *Maqāṣid* serves to achieve benefits (*maṣlahah*) and avoid harm (*mafsadah*), thereby ensuring a just and functional society (Ibn Ashur, 2006).

Maslahah refers to public interest or benefit and is a fundamental concept in Islamic jurisprudence. It supports actions and rulings that promote the welfare of individuals and society (Kamali, 2011). Scholars classify *maṣlahah* into three types:

- i. *Maslahah Mursalah*: Benefits not explicitly mentioned in *Sharī'ah* but considered valid due to their alignment with its principles.
- ii. *Maslahah Mu'tabarah*: Benefits explicitly recognized in Islamic texts.
- iii. *Maslahah Mulghah*: Benefits that are rejected because they contradict explicit *Sharī'ah* principles (Al-Shatibi, 1997).

Mafsadah denotes harm or corruption. In Islamic legal theory, it represents any action or ruling that could lead to negative consequences for individuals or society. The avoidance of *mafsadah* is a critical objective of *maqāṣid* reinforcing the need to prevent damage while promoting benefits (Auda, 2008).

Islamic scholars categorize *maqāṣid* into three levels based on their importance:

- i. *Dharuriyyat* (ضروريات) - Necessities: These are essential needs required for human survival and well-being, including the protection of religion, life, intellect, lineage, and property (Al-Ghazali, 1997).
- ii. *Hajiyyat* (حاجيات) - Complementary Needs: These needs enhance life by reducing hardship and providing comfort, such as trade regulations and social welfare.
- iii. *Tahsiniyyat* (تحسينيات) - Embellishments: These involve values that promote beauty and refinement in life, such as ethical conduct and cultural advancements (Ibn Ashur, 2006).

Maqāṣid al-Sharī'ah serves as a guiding framework in Islamic jurisprudence, ensuring that legal rulings align with justice, public welfare, and ethical conduct. By emphasizing the protection of essential human needs and promoting societal well-being, *maqāṣid* provides a dynamic approach to interpreting Islamic law. The principles of *maslahah* and the avoidance of *mafsadah* further reinforce the role of *Shari'ah* in maintaining balance and fairness within society. Understanding these concepts allows for a more informed and adaptable application of Islamic law in contemporary contexts while remaining true to its foundational principles.

- iii. Al-Ghazali (d. 1111 CE): He outlined the preservation of five essential aspects of human life as the primary objectives of *Sharī'ah*: religion (*din*), life (*naḥs*), intellect (*'aql*), lineage (*nasl*), and property (*mal*) (Al-Ghazali, 1997).
- iv. Ibn Ashur (d. 1973 CE): He emphasized that *Maqāṣid* serves to achieve benefits (*maslahah*) and avoid harm (*mafsadah*), thereby ensuring a just and functional society (Ibn Ashur, 2006).

Maslahah refers to public interest or benefit and is a fundamental concept in Islamic jurisprudence. It supports actions and rulings that promote the welfare of individuals and society (Kamali, 2011). Scholars classify *maslahah* into three types:

- iv. *Maslahah Mursalah*: Benefits not explicitly mentioned in *Sharī'ah* but considered valid due to their alignment with its principles.
- v. *Maslahah Mu'tabarah*: Benefits explicitly recognized in Islamic texts.
- vi. *Maslahah Mulghah*: Benefits that are rejected because they contradict explicit *Sharī'ah* principles (Al-Shatibi, 1997).

Mafsadah denotes harm or corruption. In Islamic legal theory, it represents any action or ruling that could lead to negative consequences for individuals or society. The avoidance of *mafsadah* is a critical objective of *maqāṣid* reinforcing the need to prevent damage while promoting benefits (Auda, 2008).

Islamic scholars categorize *maqāṣid* into three levels based on their importance:

- iv. *Dharuriyyat* (ضروريات) - Necessities: These are essential needs required for human survival and well-being, including the protection of religion, life, intellect, lineage, and property (Al-Ghazali, 1997).
- v. *Hajiyyat* (حاجيات) - Complementary Needs: These needs enhance life by reducing hardship and providing comfort, such as trade regulations and social welfare.
- vi. *Tahsiniyyat* (تحسينيات) - Embellishments: These involve values that promote beauty and refinement in life, such as ethical conduct and cultural advancements (Ibn Ashur, 2006).

Maqāṣid al-Sharī'ah serves as a guiding framework in Islamic jurisprudence, ensuring that legal rulings align with justice, public welfare, and ethical conduct. By emphasizing the protection of essential human needs and promoting societal well-being, *maqāṣid* provides a dynamic approach to interpreting Islamic law. The principles of *maslahah* and the avoidance of *mafsadah* further reinforce the role of *Shari'ah* in maintaining balance and fairness within society. Understanding these concepts allows for a more informed and adaptable application of Islamic law in contemporary contexts while remaining true to its foundational principles.

In conclusion, the integration of *maqāṣid al-sharī'ah* in the halal poultry industry reinforces not only the legal and ritual dimensions of halal but also the spiritual, ethical, and social aspirations of Islamic law. By aligning industry practices with the goals of Shariah, the industry can achieve a holistic form of integrity that resonates deeply with Muslim consumers in Malaysia and beyond.

2.10.1 Protection of Religion

This objective of the protection of religion (*Hifz al-Din*) is to safeguard the core beliefs of Islam and improve the performance of religious obligations. The commitment to and obligation to Allah *subhanahu wa ta'ala*, the halal poultry industries must manufacture halal products for its customers for example by obtaining the halal certification from JAKIM to produce halal poultry meat, providing additional assurance that the product complies with halal requirements.

The protection of religion in halal poultry production involves multiple aspects, from feed to slaughter. Halal poultry feed should be free from non-halal ingredients, contaminants, and unsafe additives to ensure the final product is *halalan tayiban* (permissible and safe) (Ashraf et al., 2018). The slaughter process must adhere to Islamic principles, with proposed control points covering animal handling, immobilization methods, and post-slaughter procedures (Shahdan et al., 2016). However, variations exist in religious and legal understandings of halal slaughter, particularly regarding stunning practices (Soon et al., 2017). To address these issues, some countries have established agencies to provide guidance on halal slaughtering methods, ensuring compliance with Islamic injunctions and constitutional mandates (Mughal, 2020). Overall, the halal poultry industry must balance religious requirements, animal welfare concerns, and food safety standards to meet consumer expectations and maintain the integrity of halal food production.

2.10.2 Protection of Life

The objective of the protection of life (*Hifz al-nafs*) is to safeguard and strengthen the physical well-being of people and society, including their health and safety. In addition to following the halal concept, which forms the foundation of every Muslim's dietary practice, taking care of one's body's health and safety by eating wholesome, nutritious food is another way to preserve life. Food production must benefit people instead of potentially fatally harming them.

In this context, the poultry industry plays a significant role in supporting the protection of life by providing an essential source of protein and nutrients, particularly for Muslim populations that prioritize halal food consumption. Human beings require food not only for satisfaction but for survival and health maintenance. Chicken meat, which is a key product of the poultry industry, is widely recognized as a vital source of high-quality protein. It contains essential nutrients such as vitamin B12, niacin, selenium, and phosphorus, all of which support the development of the nervous system, immune function, and bone health (Food and Agriculture Organization (FAO), 2013).

In many Muslim-majority countries, chicken is one of the most commonly consumed meats due to its affordability and halal status. Thus, the poultry industry serves a central role in ensuring nutritional well-being and food security. However, the contribution of this industry to the protection of life goes beyond food supply. It also includes the implementation of halal integrity, animal welfare, and biosecurity standards that reduce health risks such as zoonotic diseases, including avian influenza and salmonella (WHO, 2023).

In conclusion, the poultry industry directly supports the Islamic objective of protecting human life. By providing necessary nutrition, upholding halal standards, ensuring animal welfare, and maintaining food safety, the industry contributes to individual and societal well-being. Its alignment with the goals of *maqāṣid al-Sharī'ah* demonstrates that ethical food production is not only a public health concern but also a moral and religious responsibility (Auda, 2008).

2.10.3 Protection of Intellect

The objective of the protection of intellect (*Hifz al-'aql*) is to safeguard people from ignorance and intellectual oppression while advancing knowledge and education. Islam places high importance on nurturing the mind, promoting good behaviour and protecting individuals from anything that harms their ability to think, reason, and make sound judgments. In the poultry industry, this principle is relevant not only in food production but also in how workers are treated and how the industry operates ethically.

A good state of mind begins with good nutrition. Poultry products, especially eggs and chicken meat, are rich in nutrients like omega-3 fatty acids, vitamin B12, and choline nutrients that support brain health and cognitive function (Food and Agriculture Organization (FAO), 2013). By providing access to clean, halal, and nutritious food, the poultry industry contributes to mental clarity, concentration, and overall cognitive development, particularly for children and the elderly.

Beyond food, the poultry industry has a role in shaping the mental well-being of its workers. Providing a clean, safe, and respectful working environment is essential for maintaining a healthy state of mind. Islam promotes good conduct (*akhlāq*) in all areas of life, including in business and labour relations. Employers are reminded to treat workers fairly, offer proper rest, and not burden them beyond their capacity (Qur'an 2:286). When workers are overworked, underpaid, or mistreated, it can lead to mental fatigue, stress, and even depression thus undermining the protection of their intellect.

Furthermore, training and education play a critical role in *hifz al-'aql*. Workers in the poultry industry must be trained not only in technical skills but also in ethical practices, hygiene, and halal procedures. Proper training helps workers think critically, make informed decisions, and handle animals and food products responsibly. The Prophet Muhammad (peace be upon him) said, “The best of you are those who learn and teach” (Sunan al-Tirmidhi, 2682). By investing in continuous learning and upskilling, the industry empowers its workforce intellectually and morally.

In conclusion, the principle of protecting intellect is embedded in many aspects of the poultry industry from the nutritional value of its products to the ethical treatment

and education of its workers. When practiced holistically, the industry not only supports physical well-being but also contributes to mental clarity, ethical awareness, and the moral growth of society, aligning with the Islamic aim of safeguarding the human intellect.

2.10.4 Protection of Lineage

The protection of lineage (*Hifz al-nasl*) is to safeguard the family unit and foster positive relationships among family members and the whole society (*ummah*). To ensure the well-being of future generations every product should be free from the any mixture of haram, dangerous, and illegal elements (A. Aziz et al., 2020). In the context of the poultry industry, this objective is linked closely to the consumption of *halalan tayiban* food, the health of family members, and the ethical responsibility of ensuring the purity and safety of what people eat.

Islam encourages Muslims to consume food that is both *halal* (permissible) and *tayib* (wholesome and pure). This principle ensures that the food consumed by individuals not only complies with religious standards but also supports physical and mental health (Aziz et al., 2023). Poultry, when produced according to halal and *tayib* guidelines, is a vital source of high-quality protein, essential for child development, maternal health, and overall family nutrition (FAO, 2021).

Moreover, the ethical values embedded in *hifz al-nasl* extend beyond physical health to include moral and spiritual upbringing. Food influences behaviour and character. Consuming *halalan tayiban* food is believed to purify the soul and encourage righteous behaviour, which is essential in raising children within a virtuous and stable family environment (Riaz & Chaudry, 2004). The poultry industry, by adhering to Islamic principles in sourcing, slaughtering, processing, and packaging, plays a critical role in supporting this broader ethical ecosystem.

In conclusion, the protection of lineage in Islam is not limited to issues of inheritance or family law it also encompasses what families consume. The poultry industry, when guided by halal and *tayib* standards, contributes significantly to ensuring that individuals and future generations are healthy, morally sound, and spiritually grounded. This reinforces the link between ethical food production and the foundational goals of Islamic law.

2.10.5 Protection of Wealth

According to Ibn Ashur (2006), protecting wealth serves several important purposes. Firstly, it aims to promote the continuous movement and exchange of wealth among different members of society. This circulation helps ensure that economic activities are active and balanced, preventing wealth from being concentrated in the hands of a single group. Secondly, the protection of wealth is intended to uphold justice by making sure that everyone has a fair opportunity to access and benefit from economic resources (Majeed & Zanib, 2016). As a result, a few unfair business practices, like usury (*riba*), are forbidden in Islam.

Promoting halal poultry production domestically helps circulate wealth within the Muslim community. Instead of relying on imports, local halal-certified poultry companies can create job opportunities and support the economy, especially in rural areas. This aligns with the Islamic principle of ensuring economic balance and avoiding wealth concentration among the rich (Qur'an, 59:7).

Additionally, halal poultry businesses that grow in a lawful and ethical way can contribute to Islamic social finance instruments like *zakat*, *infaq*, or *waqf*. Wealth generated from halal means becomes a source of blessings and social support for the poor. This contributes to the reduction of poverty and protects the socio-economic welfare of the community (Dusuki & Abdullah, 2007).

According to Bonne & Verbeke (2008), halal integrity is a key factor in gaining and maintaining consumer trust, especially in export markets like the Middle East and Southeast Asia. Halal certification also increases market access and product value. It allows businesses to reach wider Muslim markets, especially in countries where halal is a legal requirement. According to the State of the Global Islamic Economy Report (Liqat, 2023), the halal food industry is worth over USD 1.27 trillion, and poultry is a major component. Ensuring halal compliance helps businesses tap into this growing market and protect their financial interests.

In conclusion, protecting wealth in the halal poultry industry is not just about making money but it is about doing business ethically, fairly, and sustainably. By following the halal value chain and embracing halal socio-economic values, poultry businesses can secure their financial health, protect the income of all stakeholders, and contribute positively to society. This is a true reflection of *ḥifẓ al-māl* in action within the modern halal industry.

2.11 CONCLUSION

To conclude, it is clear that each aspect of *maqāṣid al-Sharī'ah* aided the implementation of the halal poultry supply chain sector. *Maqāṣid al-Sharī'ah* takes a complete and compassionate approach to the halal poultry supply chain that is compatible with Islamic values and principles, prioritizing the welfare of people and society. Malaysia, guided by the *maqāṣid al-Sharī'ah*, has the potential to serve as an example for other countries seeking to establish stable halal poultry supply chains that benefit everyone.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION TO THE CHAPTER

This chapter explains in detail the procedures and methods taken by the researcher. The methods that have been used in this study are suitable to fulfil the objective of this study. The objectives of this study are; to explain the concept of halal supply chain integrity in the context of halal poultry industries in Malaysia; to explore the current practices of the halal supply chain integrity in the context of halal poultry industries in Malaysia; to explore the opportunities for enhancing the halal supply chain integrity in the context of halal poultry industries in Malaysia; to propose a conceptual framework for practicing integrity in the halal food supply chain industry in Malaysia based on *maqāsid al-Sharī'ah*.

This chapter will include the research method, design, data collection, data analysis and others. The main research methodology used in this study is qualitative research. Interviews with informants that are from academic and industry backgrounds. All the information was analyzed using inductive analysis.

3.2 PHILOSOPHICAL ASSUMPTION

Interpretivism highlights how the person's vision and interpretation of social reality are influenced by his or her ideological ideas. As a result, rather than being received or persuaded from other sources, information is acquired via personal experience. The interpretative paradigm believes that reality is multi-layered and multifaceted, with several interpretations for a single event. When researching a topic, we use research

approaches to help us understand how people perceive and behave in their social environments.

Interpretivism emphasizes what people speak, act, and feel, as well as how they make meaning of the events under investigation. Individuals and groups provide meaning to their experiences, and interpretivism emphasizes this. Themes, trends, and patterns should emerge as a consequence of the research process, and it is the researcher's responsibility to understand real-life situations from an insider's perspective.

That is the reason why the researcher assumes that this research is the interpretive research paradigm that matches the descriptions of the study the most.

3.3 RESEARCH DESIGN

The researcher opted for a qualitative methodology to explore unobserved phenomena on the halal integrity in the halal food supply chain in Malaysia. A multiple case study approach was adopted as the main strategy to collect rich data and gain an in-depth understanding of the issue of halal integrity from the halal supply chain industry in the context of halal poultry. A multiple case study was done to examine the unexplored phenomena. The number of respondents in a qualitative study is not the main issue since the aim of the study is to understand the phenomena, not to generalize the findings. Thus, it is appropriate to choose multiple case studies for this research.

This study follows multiple case study protocols to ensure the reliability of the data. A semi-structured interview was performed to collect rich data on the integrity of the halal food supply chain industry in Malaysia.

3.4 RESEARCH POPULATION

When performing qualitative research, researchers frequently employ the non-probability sampling approach. Researchers utilize it when they have a limited amount of time to do research or a restricted budget. This strategy is used by the researcher to determine if a given subject requires further investigation and it is used when we don't prefer results to be generalizable to the entire population.

For researchers implementing surveys in the real world, non-probability sampling approaches offer a more suitable and practical strategy. Although statisticians favour probability sampling because it offers data in the form of numbers, it may produce similar, if not identical, quality findings if done appropriately.

Because the sample is known to the researcher, non-probability sampling is faster and more cost-effective than probability sampling. Respondents answer more rapidly than persons chosen at random because they are highly motivated to engage.

3.5 SAMPLING PROCEDURE AND SAMPLE SIZE

This study employed a purposive sampling strategy, which is widely regarded as appropriate within qualitative research paradigms where the emphasis lies in acquiring in-depth, context-specific insights rather than statistical representativeness. Purposive sampling also referred to as judgmental or criterion-based sampling entails the deliberate selection of cases based on their capacity to illuminate the phenomena under investigation (J. W. Creswell, 2009). It is particularly useful when the researcher seeks to explore complex social processes through information-rich cases that can yield comprehensive and nuanced understanding.

In the context of this study, purposive sampling was strategically adopted to select three poultry processing companies operating within Malaysia's halal supply chain. The inclusion criteria considered organisational scale, halal certification status,

years of operational experience, daily processing capacity, and geographical location. These criteria ensured the selection of diverse and representative cases that could provide meaningful insight into the integrity dimensions of halal practices across different operational contexts.

The selected cases are as follows:

- Company A (Kedah): A large-scale, vertically integrated poultry company with over 40 years of operational experience, processing in excess of 50,000 birds daily. This organisation was selected due to its longstanding presence and comprehensive integration across the supply chain, offering a robust context to examine halal compliance mechanisms from farm to fork.
- Company B (Melaka): A medium-sized enterprise established in 1999, with a daily processing capacity exceeding 10,000 birds. This company was purposefully selected to represent the experiences and constraints encountered by mid-sized industry players in implementing and sustaining halal integrity, particularly under conditions of limited scalability and resource availability.
- Company C (Perak): A major industry player with operations since 1990, processing approximately 180,000 to 200,000 birds per day. The inclusion of this company facilitates cross-case comparative analysis with Company A, enabling the identification of both convergences and divergences in halal integrity practices among large-scale producers in differing regional and operational settings.

The diversity of the cases selected enhances the analytical depth and transferability of the study's findings (Yin, 2003). In particular, the variation in organisational scale and geographical distribution contributes to data triangulation, thereby increasing the trustworthiness and robustness of the qualitative insights generated.

While the number of cases is limited to three, this is methodologically justified within a multiple case study design, where the objective is to conduct in-depth, contextually grounded exploration rather than broad generalisation. Each case was selected not for representativeness in the statistical sense, but for its potential to shed

light on the complexities, challenges, and operational realities of halal supply chain integrity in the Malaysian poultry industry.

3.6 RESEARCH INSTRUMENT

The primary instrument for gathering data during qualitative interviewing is the researcher. The researcher watches, makes notes, interacts with people, and conducts interviews. These are all skills that need to be mastered. The fact that we talk to people in our daily lives, listen to them, ask questions, and engage with them does not automatically make us effective interviewers. At the core of qualitative research is the notion that the researcher is deeply involved in the data collection process. This involvement typically manifests through interviews, observations, and document analysis. In interviews, the researcher's skill in crafting questions, probing for deeper insights, and adapting the conversation based on participant responses is crucial. This dynamic interaction allows for the exploration of nuanced perspectives and complex issues.

One of the distinguishing features of qualitative research is its reliance on the researcher's subjective understanding to interpret data. This subjectivity, rather than being a limitation, serves as a powerful tool for uncovering meanings and themes that are not immediately apparent. Researchers bring their own experiences and insights to the analysis, allowing them to identify patterns and connections that a purely objective lens might miss.

Moreover, the researcher's ability to contextualize findings within the broader social, cultural, and economic framework enhances the depth of interpretation. This contextual analysis is vital for studies like those in the halal poultry industry, where intricate cultural and religious factors play a significant role. By placing findings within this context, the researcher provides a comprehensive view that captures the complexity of the phenomena under investigation.

The researcher's active engagement in the research process offers several advantages. Flexibility is paramount, allowing the researcher to adapt methods in real time to explore new insights or pursue unexpected directions. This adaptability ensures that the research remains responsive to the evolving nature of human experiences.

Depth of insight is another significant advantage. Through probing and follow-up questions, researchers can delve into complex issues, uncovering rich, detailed information that structured instruments might overlook. This depth is crucial in fields like the halal poultry supply chain, where understanding stakeholder perspectives and experiences is essential for addressing challenges related to integrity and compliance.

3.7 THE DEVELOPMENT OF THE INTERVIEW PROTOCOL

The interview process offers a special opportunity to obtain detailed data from an individual. Creating an interview protocol entail defining the guidelines for conducting and carrying out interviews.

The interview procedure primarily depends on the accuracy and consistency of the information. The informants speak both Bahasa Melayu and English, thus the interview is developed in English. This will guarantee that the informants provide accurate and clear comments. Moreover, the researcher sought advice from a few senior lecturers to validate the interview questions.

3.8 DATA COLLECTION PLAN

Data can be collected in various ways including in different settings fields or labs and from different sources which include interviews (face-to-face interviews, telephone interviews and others), observations and questionnaires. However, in this study, the researcher used two types of data collection methods which are document analysis and

in-depth interviews. These two data collection methods were used in this research to obtain rich information about the study.

Firstly, the researcher collected the data using document analysis. This researcher chose two types of documents to analyze the definition of the halal integrity dimension that relates to the practice of halal integrity in the halal poultry supply chain. The research used the Manual Procedure for Halal Certification (2020), Malaysia Halal Management System and MS1500: 2019 Halal Food- General Requirements.

The second data collection is the in-depth interview. Since this study is a multiple case study, the researcher conducted in-depth interviews with three different halal poultry industries in Malaysia and several halal experts, halal consultants, halal officers and halal practitioners. The data collection method is explained in detail in the next sub-topic.

3.8.1 Document Analysis

Document analysis is a methodical process for assessing or evaluating printed and electronic (computer-based and Internet-transmitted) materials. Document analysis, like other qualitative research methodologies, necessitates the examination and interpretation of data to extract meaning, acquire insight, and build empirical knowledge.

Document analysis is an advantageous research strategy that involves analysing numerous sorts of documents, including textual and visual sources. It entails reviewing already published texts such as books, newspaper articles, academic journal articles, and institutional reports to obtain data and insights for qualitative research. Document analysis enables researchers to undertake studies that would be impossible to finish using other approaches, such as field research. It is a method of retrieving and analysing information from papers including relevant text or visual elements.

The importance and benefit of undertaking a document analysis in qualitative research is that document analysis is an underutilised method that can be beneficial for

a variety of reasons. It enables researchers to perform investigations that they would not be able to finish otherwise, particularly when they lack the money or time for field research. Document analysis can also help to alleviate the ethical difficulties that come with other qualitative methodologies. highlights the advantages of using pre-existing texts as a source of data, including the ability to access the most suitable data source for a project and the avoidance of potentially dangerous situations. It also discusses the constraints of document analysis, such as restricted information, fewer opportunities to check for bias, and insufficient data to match the researcher's findings. Overall, promotes the usefulness of qualitative document analysis in qualitative research in his article. There are various advantages of using pre-existing texts as a source of data in qualitative research:

- i. Access to the best data source: Using pre-existing documentation gives researchers access to the finest data source for completing a project, especially when direct observations or interviews are not feasible.
- ii. Avoiding harmful conditions: Document analysis can be a safer strategy in situations when researchers may be at risk of damage, such as when investigating violent environments or sensitive issues.
- iii. Document analysis is a cost-effective strategy since it removes the need for travel fees and minimizes the time and money necessary for field research.
- iv. Analyzing pre-existing writings is an inconspicuous kind of research that does not need direct interaction with people, which may be advantageous for examining sensitive or personal themes.
- v. More research opportunities: Using pre-existing texts allows academics to research issues that would otherwise be difficult to explore, such as historical research or deep personal connections.

Researchers employ document analysis for several purposes. First of all, because documents are practical and controllable resources, document analysis is an efficient and effective method of data collection. Documents are widely used and available in many formats, which makes them a dependable and easily accessible source of information. Getting and examining materials is sometimes significantly more economical and time-effective than carrying out research or trials.

Hence, the researcher believes that document analysis brings a lot of potential and advantages in extracting data for qualitative research, particularly in this study. The documents analysis used in this study are as follows:

- i. Manual Procedure for Halal Certification (Domestic) 2020.
- ii. MS1500 (2019) Halal food - General requirements (Third revision).

3.8.2 In-depth Interview

According to an in-depth interview is a qualitative research approach that entails conducting extensive individual interviews with a small group of informants to learn about their viewpoints on a certain topic, program, or issue. Informants, staff, and others involved with a program can be asked about their program-related experiences and expectations, their thoughts on program operations, processes, and outcomes, and any changes they notice in themselves as a result of their participation in the program.

Semi-structured in-depth interviews were employed in this study to get the necessary data. In a semi-structured in-depth interview, the interviewer typically has a list of questions or topics to cover. Since it's the goal to persuade the informants to speak on their terms, inquiries are usually left open-ended to allow for a variety of possible answers.

Nevertheless, compared to the more all-encompassing and unstructured interview, it is more targeted. The interviewer can mark this off without having to ask the question on the checklist if, throughout the semi-structured interview, the informant heads from one area to another that is on the checklist without the interviewer asking a question.

The questions are posed in a way that advances the (sometimes one-way) discourse, not in any particular order. The purpose of the questions is to generate the informant to discuss particular topics that the interviewer is interested in learning more

about. Therefore, it is not necessary to ask the questions in a specific order or utilize the same terminology with every informant. To cover the topic list in a way that best fits each situation, the interviewer must take initiative.

3.8.3 Multiple Case Study

Although case study research is not solely qualitative, the data collecting and data analysis techniques have mostly been qualitative because the main goal of the research is to gather stakeholders' perspectives. Data for this study is using semi-structured interviews, whose key benefit is flexibility. Additionally, because there hasn't been much prior study on the subject, attempts have been made to make the chain of evidence transparent and to organize the data acquired in a thorough and repeatable manner. The use of a qualitative research technique within a case study approach highlights the importance of "first-hand examination of current industry activity," its concentration on dynamic as opposed to static phenomena, and a focus on incorporating an interpretative, naturalistic approach to the subject matter.

This study examined the integrity practices of three halal poultry industries throughout the supply chain. The informants included three halal executives from the selected poultry companies and five halal experts in Malaysia.

The researcher selected three halal poultry industries with a total production exceeding 8,000 chickens per day. To maintain anonymity and protect the industry's image, the companies were referred to as A, B, and C. Only the states in which these companies are located—Kedah, Melaka, and Perak—were disclosed.

- i. Company A (Kedah)
- ii. Company B (Melaka)
- iii. Company C (Perak)

3.8.4 Getting Access

Before starting the fieldwork, it was crucial to connect with the right people. This meant identifying key individuals, reaching out to them, and ensuring they were comfortable and willing to participate in the study.

To find the most relevant participants, the researcher obtained a list of poultry manufacturers from Jabatan Kemajuan Islam Malaysia (JAKIM). This provided a reliable starting point, ensuring that I reached out to individuals actively involved in the halal poultry industry.

Once the researcher had identified potential participants, the researcher contacted them through various channels to introduce the study and invite them to take part:

- i. Phone Calls: Speaking directly with industry representatives allowed the researcher to explain the research, answer any immediate questions, and gauge their interest.
- ii. Emails: the researcher sent formal invitations outlining the study's objectives, emphasizing confidentiality, and providing details about the interview process.
- iii. Text Messages & WhatsApp: To follow up, the researcher sent brief messages, ensuring clarity, answering any concerns, and confirming their availability.

When informants expressed interest in participating, the researcher made sure to secure their consent either verbally or in writing while adhering to ethical guidelines. We then agreed on a convenient time and place for the interview.

Establishing a comfortable and professional relationship was essential. The researcher maintained respectful communication, emphasizing the importance of their insights in improving halal industry practices. By creating a space where they felt valued, the researcher encouraged open and honest discussions, ensuring that their perspectives were heard and appreciated.

3.8.5 Actual Fieldwork

Once the necessary permissions were secured and the informants had agreed to participate, the next crucial step was to begin the fieldwork. This phase marked the heart of the research, where valuable firsthand insights were gathered from individuals directly involved in the halal poultry industry.

To facilitate smooth and professional interactions, the researcher reached out to participants using multiple communication methods. Formal letters were sent as an official introduction, establishing the legitimacy of the study and providing a clear overview of its objectives. Emails served as detailed follow-ups, offering additional information, outlining the research process, and confirming interview logistics. Simultaneously, phone calls were made to engage directly with informants, address any concerns, and finalize the arrangements for the interviews.

Each interaction was handled with professionalism and respect, ensuring that the participants felt comfortable and valued. Their willingness to share their experiences and perspectives was vital to the study, and the researcher made every effort to ensure the process was seamless and accommodating. By fostering open communication and maintaining a respectful approach, the researcher was able to gather rich, meaningful insights that would significantly contribute to the research on halal poultry supply chain integrity.

3.8.6 Interview Stages

The interview process is structured into three stages: the entry stage, the interview session itself, and the exit stage.

In the entry stage, the researcher begins by greeting the informant and expressing gratitude for their participation in the interview. This initial interaction sets the tone for a respectful and professional conversation. The researcher then engages in

an ice-breaking session, asking relevant questions to establish rapport and create a comfortable environment. Following this, the purpose of the interview is explained, and the researcher provides a brief overview of the session's rules, including confidentiality assurances, the expected duration, and the format of the interview. Additionally, the researcher requests permission to record the session to ensure accurate data collection.

The interview itself requires the researcher to employ a variety of soft skills to facilitate a smooth and productive conversation. Once the informant is ready, the researcher asks the core questions, using probing techniques to encourage the interviewee to elaborate and provide detailed responses. It's important for the researcher to actively listen, ask follow-up questions, and record responses thoughtfully. The researcher must also ensure clarity by confirming each response before moving on to the next question. Throughout this stage, the researcher takes care to document the responses accurately while summarizing key points when necessary. As the interview nears completion, the researcher informs the informant when the final question is approaching, wrapping up the session by summarizing the insights gained and highlighting the value of the informant's contribution.

In the exit stage, the researcher recaps the key takeaways from the interview, ensuring that both the researcher and informant are aligned on the main points discussed. The researcher expresses sincere appreciation for the informant's time and insights, acknowledging their valuable contribution to the study. If appropriate, a small token of appreciation may be offered as a gesture of gratitude. The researcher then bids farewell, concluding the interview in a respectful and professional manner.

3.8.7 Data Analysis Procedures

The data analysis in this study was grounded in the qualitative analytical framework proposed by Miles et al. (2014) comprising three interconnected subprocesses: data condensation, data display, and conclusion drawing and verification. These analytical phases were operationalized using ATLAS.ti version 25, a robust Computer-Assisted

Qualitative Data Analysis Software (CAQDAS) that enhanced the rigor, transparency, and efficiency of the analytical process.

Data Condensation

Data condensation involves the systematic process of selecting, focusing, simplifying, abstracting, and transforming raw qualitative data into analytically meaningful forms. Unlike the earlier term “data reduction,” condensation emphasizes refinement rather than loss of information. In this study, data condensation was executed through open coding, where relevant excerpts from interview transcripts were tagged with initial codes using ATLAS.ti’s Coding Tool. This allowed the researcher to highlight significant ideas, experiences, and patterns that aligned with the research objectives related to halal supply chain integrity.

Data Display

Following data condensation, the organized data were visually presented using ATLAS.ti’s data visualization tools, such as code-document tables, code co-occurrence matrices, and network views. These tools enabled the researcher to compare findings across cases, identify code interrelations, and discover emergent patterns. Data display was crucial for facilitating thematic interpretation by providing a structured overview of the coded data in a concise, graphical format.

Conclusion Drawing and Verification

In the final phase, conclusions were drawn based on recurring themes and patterns identified during coding and visualization. ATLAS.ti’s Memo and Query Tool features were utilized to refine the interpretation process, generate analytic memos, and track conceptual links across the dataset. Throughout this process, the researcher engaged in iterative reading and verification to ensure that findings were thematically saturated, internally coherent, and supported by empirical evidence. Cross-case comparison among the three poultry companies enhanced the credibility and transferability of the results.

3.8.7.1 Application of Creswell's Data Analysis Framework Using ATLAS.ti Version 25

This study also adhered to Creswell's (2013) five-step model for qualitative data analysis, integrated with digital tools available in ATLAS.ti version 25 to facilitate systematic and transparent analysis:

- **Transcription and Familiarization:** Audio recordings of the interviews were transcribed verbatim into Microsoft Word. Special care was taken to translate technical or colloquial expressions into formal Malay for clarity. The transcripts were then imported into ATLAS.ti for analysis. The researcher engaged in repeated readings of the transcripts to gain a comprehensive understanding of the data and to begin noting early insights.
- **Initial Coding:** Open coding was performed within ATLAS.ti by attaching descriptive labels (codes) to meaningful segments of text. Codes were either predefined based on the research framework or generated inductively during data immersion. ATLAS.ti's Code Manager enabled the organization, merging, and hierarchical arrangement of codes, supporting analytical flexibility.
- **Category Development:** The next step involved grouping similar codes into broader categories or sub-themes using the Code Grouping and Smart Coding features. These categories represented emerging dimensions of halal integrity practices and allowed the researcher to move from descriptive to interpretive analysis.
- **Theme Identification:** Categories were then synthesized into higher-order themes, reflecting overarching concepts related to the study's research questions. ATLAS.ti's Network View allowed for the mapping of connections between codes, categories, and themes, thereby offering a visual and conceptual representation of the data structure.
- **Drawing Conclusions:** The final analytical step involved interpreting the themes to generate meaningful conclusions. ATLAS.ti's memoing feature was instrumental in capturing analytical reflections, theoretical insights, and explanatory notes. These memos, combined with code frequency analysis and

thematic mapping, guided the synthesis of findings and informed the final interpretation of halal supply chain integrity across the selected cases.

3.9 ETHICAL CONSIDERATION

The ethical considerations of this research are critical, particularly due to the religious, cultural, and consumer trust dimensions associated with halal poultry supply chain integrity. This study has been conducted with strict adherence to ethical guidelines to ensure that the integrity of the data and the trust of stakeholders are maintained throughout. The primary ethical considerations are outlined as follows:

- i. **Protection of Religious Integrity:**
Given the centrality of halal compliance to the religious practices of Muslim consumers, this research must respect and uphold the principles of halal in line with Shariah law. Efforts have been made to ensure that data collection, analysis, and reporting are aligned with Islamic principles, thus safeguarding the sanctity of halal standards and fostering consumer trust in halal certification processes.
- ii. **Transparency and Honesty:**
Transparency in research design, methodology, and data collection has been prioritized to ensure the study's integrity. This includes full disclosure of the methods used, sources consulted, and analytical techniques employed to allow for reprehensibility and validation by other researchers. Additionally, any potential conflicts of interest have been identified and addressed to avoid compromising the impartiality of the research findings.
- iii. **Privacy and Confidentiality:**
Ethical considerations regarding privacy and confidentiality have been observed throughout this study, especially concerning sensitive production practices or proprietary information shared by halal industry stakeholders. Measures have been implemented to ensure that no confidential data is disclosed, thus maintaining the trust and cooperation of industry partners involved in the research.

iv. Avoidance of Bias:

To present an objective and comprehensive view, care has been taken to avoid any biases toward particular companies, practices, or methods. The research methodology has been structured to include diverse perspectives from various stakeholders within the halal poultry supply chain. This approach enhances the credibility of the findings and ensures they are representative of the industry as a whole.

v. Public Health and Safety Implications:

Since the study touches on factors that influence product quality, hygiene, and consumer safety, ethical responsibility entails accurate reporting of findings with due consideration for public health. Findings and recommendations have been communicated in a manner that acknowledges the potential impact on consumer safety while respecting the guidelines set forth by regulatory bodies.

vi. Consideration of Stakeholder Impacts:

Recognizing that the research findings may have implications for stakeholders across the halal poultry supply chain, care has been taken to present results in an ethical and balanced manner. Negative findings are presented alongside constructive recommendations, mitigating the potential for harm to specific stakeholders while promoting industry-wide improvements.

vii. Promotion of Ethical Standards in Halal Supply Chains:

Given the potential influence of this study on halal industry practices, there is an ethical imperative to advocate for high standards of integrity, quality, and transparency within the supply chain. By highlighting best practices and recommending areas for improvement, this research seeks to contribute positively to the halal poultry industry, ultimately enhancing consumer confidence in halal-certified products.

Through these considerations, the study upholds ethical research practices and contributes to the broader objective of supporting a trusted and transparent halal poultry supply chain in Malaysia.

3.10 CONCLUSION

This chapter discussed the research methodology employed in this study. To ensure the accuracy and reliability of data collection, the researcher followed all necessary steps, conducting in-depth interviews with all informants. Based on the methods described in this chapter, the researcher analyzed and discussed the findings in the following chapter.



CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 MULTIPLE CASE STUDIES

The purpose of this qualitative multiple-case study is to explore the practice of the halal poultry supply chain using semi-structured interviews. This chapter explained the details of the poultry companies that were chosen for this research.

4.2 DESCRIPTION AND SELECTION OF MULTIPLE CASE STUDIES

The selection of the poultry slaughterhouses in this study was based on several criteria. First, all facilities were required to have a valid halal certification from the Department of Islamic Development Malaysia (JAKIM), as verified through the official Malaysian Halal Portal (halal.gov.my). Second, the facilities were selected based on their geographical location to ensure accessibility for data collection and to represent different operational settings. Third, the study considered the size of the facility, including one medium-scale and two large-scale slaughterhouses, to allow for comparative analysis of practices across different production capacities. Finally, a key technical criterion was the use of electrical water stunners, as this method is commonly used in Malaysia and is a significant point of discussion in halal poultry processing.

These selection criteria helped ensure that the selected companies referred to as Company A, B, and C represented relevant and diverse perspectives within the halal poultry industry. The personnel interviewed from these facilities were coded as P1, P2, and P3.

4.3 PROFILE OF THE POULTRY INDUSTRY PLAYERS INVOLVED IN THE MULTIPLE CASE STUDIES

4.3.1 Company A

Company A is one of the largest food producers in Malaysia and is listed on the Main Board of Bursa Malaysia. For over 40 years, they have been feeding the nation with food from their poultry farms and through other food-related businesses. The expansion in the domestic and international markets is rapid, bolstered by careful strategy and in-depth industry knowledge. Company A also listed on the Main Market of Bursa Malaysia Securities Berhad, is one of the largest food producers in Malaysia. With more than 40 years of experience in the food business.

Their corporation has four different divisions which are complementary to one another. They also engage different parties including internal and external parties for a long-term partnership.

It also is a fully integrated poultry farming and food processing company that undertakes the breeding and farming of grand-parent stock, parent stock and broilers, including the trading of poultry feeds and other farm consumables, chicken processing and manufacturing and trading of further processed meat-based food products like the operation of supermarkets, marine products manufacturing and fast-food operation and franchising.

These complementary businesses leverage one another to maximize efficiency and profitability. Their operations span across Peninsular Malaysia making them one of the largest integrated poultry farming producers in the country.

Their continued growth with sustainable farming is assured by the high quality of animal breed, effective farm management and use of up-to-date technology as well as strict bio-security to prevent disease outbreaks. The recent rapid growth is the result of the effective management of the integrated value chain as well as expansion via acquisitions.

Their integrated poultry farming's upstream activities, which include grand-parent stock and parent stock farming and hatcheries activities, are primarily located in Penang, Kedah and Malacca while the broiler farming activities are located throughout Peninsular Malaysia, making us one of the largest integrated poultry farming producers in the country. These farms are under the Group's integrated poultry farming and processing division which has been the main revenue generator for the Group. Company A also imports grand-parent stock for breeding of parent stock to produce broiler eggs; farming and processing of broiler chicken and further processing into food products.

Their broiler farms are managed with proper temperature control, providing a healthy and comfortable environment for the broilers to grow. We adopt certain farm management practices for our broiler farms such as vaccinations, health and hygiene maintenance, and quality of chicken feeds and drinking water to ensure healthy growth of broilers. In addition to their broiler farms, they contract out to various farmers for the farming of broiler chickens. They support contracted farmers with a supply of day-old chicks, feed, veterinary supplies and technical know-how in best farm practices.

The matured broiler chickens are sent to our four state-of-the-art slaughtering and processing plants located at Sungai Petani (Kedah), Segambut (Kuala Lumpur), Majlis Tanah (Malacca) and Kuantan (Pahang). The slaughtering and processing of the broiler chickens adhere to strict hygiene and Halal protocols. The broilers produced at our Johor farms with certification from the Agri-Food and Veterinary Authority of Singapore are exported to our Singapore processing plant at Senoko Crescent for processing.

Company A started operating in 1955 and has two processing plants which are in Segambut and Sungai Petani. Company A in Sungai Petani is the processing of broiler chicken. Chicken capacity for now for a year is 31200 metric tons, a month 2600 metric tons, and a day approximately 100 metric tons. The total now per head is approximately 50,000 heads and the capacity will increase even more after they upgrade the new machine that can reach the maximum of 10,000 chickens. But for now, 7000 broilers in 1 hour. The capacity of the broilers is not increasing now, but the processing speed is increasing. Their main customers are mostly from Lotus's, Giant and hotels around Kedah.

4.3.2 Company B

Company B is an enterprise based in Alor Gajah. It operates in the Agriculture, Forestry, Fishing and Hunting industries. Company B was incorporated on December 27, 1999. They started their company from a farm. There were four farms in the beginning. Then the owner sold three farms to another company and now they only managed one farm. Their focus is on the slaughterhouse and processing. Even though the establishment date of this company was 1999, the establishment of the slaughterhouse only started in 2018 and 2019, they obtained the halal certification for the slaughterhouse.

They produce more than 57 products like chicken drumette, chicken fillets, chicken wings, whole chicken, minced chicken and many more. All of the chickens were from the supplier that has a MYGAP certificate. MyGAP is a comprehensive certification scheme for the crop, aquaculture and livestock sectors. MyGAP is implemented based on the Malaysian Standard (MS). MS 1784:2005 Crop Commodities – Good Agricultural Practice is used for the crop sector module and MS 1998:2007 Good Aquaculture Practice (GaqP) – Aquaculture Farm – General Guidelines and MS 2467:2012 – Code of Practice for Seaweed Cultivation for the aquaculture sector module. While MS 2027:2006 Good Animal Husbandry Practice for the livestock sector (DOA, 2013). MYGAP is a certificate to prove that the chicken is safe to consume.

Company B can achieve 10,000 chickens per day. The suppliers include their farm and a few contract farms. The slaughterhouse in Melaka houses the whole procedure. Typically, the chicken will come late at night or early in the morning, around 5 a.m.-6 a.m. The slaughtering process begins at 8 a.m. They have to make sure that the chickens arrive every morning in a healthy condition. They have four varieties of chicken which are black bone, broiler, layer and breeder. Black bone is generally used for medicine and is usually used by the Chinese people. It is similar to broiler chicken but with black flesh. Then there's the broiler. Most of the consumers consider the broiler type. Third, the layer type. The layer type is for the eggs and the bones are mostly harder than the usual chicken. they utilize layer chicken instead of village chicken since village chicken is more costly. Fourth, there are breeder types. This breeder is a little harsh and

tough, like an old chicken. Mostly, their customers were from all over Melaka, Johor, Kuala Lumpur, from canned food industries, Ayamas and Mamee.

4.3.3 Company C

Company C is one of the industry leaders in Malaysian poultry operations. Their core operations of poultry integration incorporate modern technology infrastructure, microbiological laboratories and bio-security measures. They also include health management monitoring to produce high-quality and healthy poultry products for their customers. Company C is one of the pioneers in poultry manufacturing in Malaysia and has been built to USDA standards. Their processing plant is located in Perak and was officially launched by Tun Mahathir bin Mohamad in August 1990.

At Company C, they practice an integrated Quality Assurance program management throughout the supply chain that is based on safety assessments and inspections, including quality audits to ensure product safety for domestic and export consumption. All of their product are certified halal by JAKIM. For the entire finishing area of the plant, they kept the temperature at 12°C to maintain the freshness in processing. Production is controlled by food technologists, engineers, skilled technicians and veterinarians to ensure the food we consume is safe and clean.

They have established partnerships with 20 distributors in more than 13 states and 3 federal territories which is over 1000 distribution points nationwide. Company C is also known as a prominent supplier to major market segments in Malaysia including quick service restaurants, café, hospitals, hypermarkets, food manufacturers and caterers.

They implemented the internationally-recognized Quality Management System (QMS) in all farms and poultry processing, certified and in compliance with standards of bio-security, good animal husbandry and veterinary health programs established by the:

- Department of Veterinary Services (DVS)
- Malaysian Good Agricultural Practices (myGAP) of livestock
- Safety and hygiene control processes through the adherence of Hazard Analysis and Critical Control Point (HACCP)
- Good Manufacturing Practice (GMP) for Food
- International Organization for Standardization (ISO) 9001:2008, (ISO) 22000:2005

Company C also adopted the *halalan tayibban* in their manufacturing. All of their products are certified halal by JAKIM and are in strict compliance with the Malaysian Halal Standard MS 1500:2009. The slaughtering chamber in Company C's factory is specially designed to face the *kiblah* direction.

Company C's plant is designed to minimize the risk of food and non-halal contamination. record and control process parameters regularly and also perform quality checks according to hazard analysis. their wastewater treatment facility conforms to strict environmental standards on waste management. Every aspect of food safety, quality, cleanliness and ethics is a top priority for them. This helps ensure every process is free of potential hazards and haram sources.

The Halal Assurance System in Company C starts with full management commitment to assure the halal integrity of products starting from the point of receiving raw materials until the dispatch of finished goods to customers. Three (3) Internal Halal Committees (IHC) namely in Lumut and Pasir Gudang and in the Poultry Processing plant in Lumut are spearheaded by a Muslim Executive Director, advised and assisted by a competent Professional Halal Executive.

Through the implementation of HAS/HACCP/FSMS, Company C will ensure the processes are free from potential hazards or haram sources in the raw materials/ ingredients. The system has considered food safety, quality and cleanliness at each level of production. It provides a systematic approach to ensure and preserve the halal integrity of products. This is based on the concept of effective recall procedure, traceability, and availability of a proper filing system for halal applications, documents,

procedures and records with a quality management system throughout the supply chain. To support the implementation of the HAS/HACCP/FSMS system, Company C has adopted the *Halalan Thoyibban* and the wholesomeness in its manufacturing process and environment.

Company C's chicken capacity total per head is approximately 180,000 to 200,000 per day which makes this company a large-scale company. Approximately, the chicken capacity can reach 18,000 heads per hour. Mainly, their customers are from franchise restaurants like Kentucky Fried Chicken (KFC), McDonald's (McD), Texas Chicken, Nandos, Gardenia and Ayamas.

4.4 DOCUMENTATION

The halal certificates for Company A, Company B and Company C are still valid according to the list retrieved from the official Malaysia halal portal's website where Company A and Company B are valid until April 2025, while Company C is good until December 2024. The results reveal that the validity of the documentation for the halal certification is consistent with the results of the interview.

All three companies in this study exhibited a business license; Halal Certificate, Halal logo and Certificate of Slaughter Approval for all slaughterers who are still in the validity and ownership of the company. This demonstrates that every company in this research complies with the standards of the halal certification. The results show that there were 3, 8 and 60 (including backups) in Company A, Company B and Company C respectively. Below are the slaughtering processes in Company C and the researcher will do a comparison with each company to see their slaughtering activities.

4.4.1 Halal Poultry Processing

The Halal status of the poultry is decided by the complete process of the whole supply chain which includes pre-slaughter management, the use of electrical stunning, Halal slaughtering procedures, handling, storage, and distribution, all of which must match *Shari'ah* law's fundamental requirements.

4.4.1.1 Pre-Slaughter Handling

From the interview, Company A, Company B and Company C mentioned that birds died due to the hot weather during the shipment from the farm. In some cases, the chicken died because of the heat coming from the spotlight in the waiting area, not due to electric shock. All the dead chickens were disposed of in their container. Company A stated that their company will send to the Alligator Farm. Meanwhile, Company B and Company C disposed of the dead chicken together with other solid waste. Figure 4.1 (company C) shows the receiving of chickens from the farm and chickens delivered using trucks (a) and the chicken in the holding area before hanging up on the shackles conveyor (b).

Simultaneously, chickens that do not match requirements, such as being too small, feeble, or dead, are segregated. This demonstrates that every operator of the slaughterhouses in the research adheres to the Halal certification by segregating dead and weak birds and not processing material or non-halal animals. According to the number of hens that die upon arrival at the abattoir is estimated to be 0.06 to 3%. Although a modest proportion, yet displayed a huge amount depending on the entire number.



(a)



(b)

Figure 4.1 Receiving of chickens from the farm and chicken delivered using trucks (a), (b) the chicken in the holding area before hanging up on the shackle's conveyor



(a)



(b)

Figure 4.2 Inspection area (ante-mortem) (a) and container tilting (b)

Ante-mortem is known as the phase of the inspection area. This is needed to screen out potentially ill or wounded chickens for isolated slaughter. This prevents contamination of the premises, equipment and staff which allows for more effective disease management, disinfection and prevention efforts. Figure 4.2 shows an example of the inspection area and container tilting before it hung onto the conveyor.

4.4.1.2 Electrical Stunning

Company A, Company B and Company C practised electrical water bath stunning before slaughtering took place. Flow rate according to the Malaysia Protocol for Halal Meat and Poultry Production the suitable voltage(v) for chicken weight is around 2.4kg to 2.7kg, it should be around 2.5v to 10.5v or 0.2 until 0.6 Ampere (A) around 3 to 5 seconds. These are only the parameters for the industry to follow but the effectiveness of this technique only relies on the fixed regulator to control the regularity of the electric current. According to P3, their company (Company C), has faced big losses as a lot of chickens died from over stunning before. As they run multiple tests to suit the best voltage for the electrical stunning, they set it to a minimum of 38v to 46v according to the size of the chicken. The bigger the size, the bigger the voltage. Now, their company has become a role model to other poultry industries around the state of Perak.

The distance adjustment of the mounting coils (shackles) on the conveyor should be investigated to identify the proper amount of time between chickens exposed to electrical shock and the capacity to execute the halal slaughtering. There is a risk of dead chickens due to the irregularities in the electrical current flow and the differences in size and age. Chicken also may have perished from asphyxia when dipped into a bathwater tank due to dipping up to the neck, but the primary notion of water bath stunning is to expose the electrical current to the chicken beak alone. Figure 4.3 shows the hanging area and electrical water bath stunning.



(a)



(b)

Figure 4.3 The hanging area (a) and Electrical water-bath stunning (b)

4.4.1.3 Halal Slaughter

Figure 4.4 shows the halal slaughtering processing of poultry at Company C. Company C mentioned that an emergency slaughter will be done manually without stunning if the chicken were found sick or weak to be hung onto the conveyor. Manual slaughter or traditional slaughter without electrical shock done while the chicken is in consciousness requires at least two workers not using conveyors. At Companies A, B and C, all chickens were slaughtered using electrical stunning and the chickens were slaughtered in a state of unconsciousness.



(a)



(b)

Figure 4.4 Halal slaughtering process (a) and bleeding time (b)

Figure 4.5 shows halal inspections were placed after the slaughtering process. This is the part where the halal checker must be very detailed and focused to check the right cut and the wrong cut of the chickens. After that, the automated head puller process. According to Company A and Company C, head pullers have become an issue for some of the Muslim customers for quite some time now as some of them thought that the chickens were not slaughtered according to the *Shari'ah* law. Some of the actions were being taken as they delivered the message and gave awareness to the public through their social media regarding the issue to prevent them from panicking and spreading the misinformation.



(a)



(b)

Figure 4.5 Halal inspection (a) and head puller (b)

4.4.1.4 Halal Management System

Results of the interviews revealed that all company have established their own Internal Halal Committee (IHC) but the number of IHC members for each company may vary as the size of the companies are different. According to Company B, since they are a medium-scale company, they were short of staff as well. There were issues where Company B monitored the slaughtering process through CCTV at a critical area and found out the halal slaughterer did not take out the chicken that died because of the stunner and their halal executive immediately went down to the site and took off the chicken. This is a very critical matter as monitoring through CCTV alone is not enough to ensure the integrity of the halal slaughtering process, because it is the responsibility of each one of the employees to make sure they comply with the halal certification procedure at all times.

4.4.1.5 Safety and Quality System

According to Company A, Company B and Company C, they all established IHC and conducted a quality program for the employees but only Company A and Company C stated that they have their own Quality Control (QC) unit. For Company B, the quality control (QC) unit is under quality assurance (QA). The QA team is more focused on documentation and this team also specialised in conducting the boot-chlorinated rinse water system. A chlorine concentration of 200 ppm (part per million) is replaced at each time of operation. All employees and visitors need to step into the chlorinated water to reduce the risk of bacterial contamination from the outside (dirty area) to the product (clean area). While the concentration of chlorine in the water bath (cooling carcasses) practised in Company A and Company B is 20 ppm.



(a)



(b)

Figure 4.6 Spin Chiller (a) and packing process (b)



Figure 4.7 Vehicles equipped with a closed cooling system (chiller) for transport and distribution of chicken meat

All three companies owned vehicles that were equipped with a chiller for the delivery of their products. Company B stated during the interview that it is best to use their vehicle compared to renting from other logistic providers to prevent other kinds of issues like contamination that would revoke their halal certification at any time. To date, Company B mentioned that they owned four vehicles equipped with chiller. Company A mentioned that they use their vehicles for delivery and also rent from other companies but need to make sure that the rental vehicles are only used for delivering halal goods. It is indeed a lot of process but they managed to handle that as they provided enough documentation. Company C, they do not have any problem with vehicles as they own their vehicles for delivery. Hence there would be no issue regarding contamination from non-halal products at all.

4.5 COMPARISON AND CONTRAST OF THE MULTIPLE CASE STUDIES

4.5.1 Company A

Flow Chart of the slaughtering process at Company A

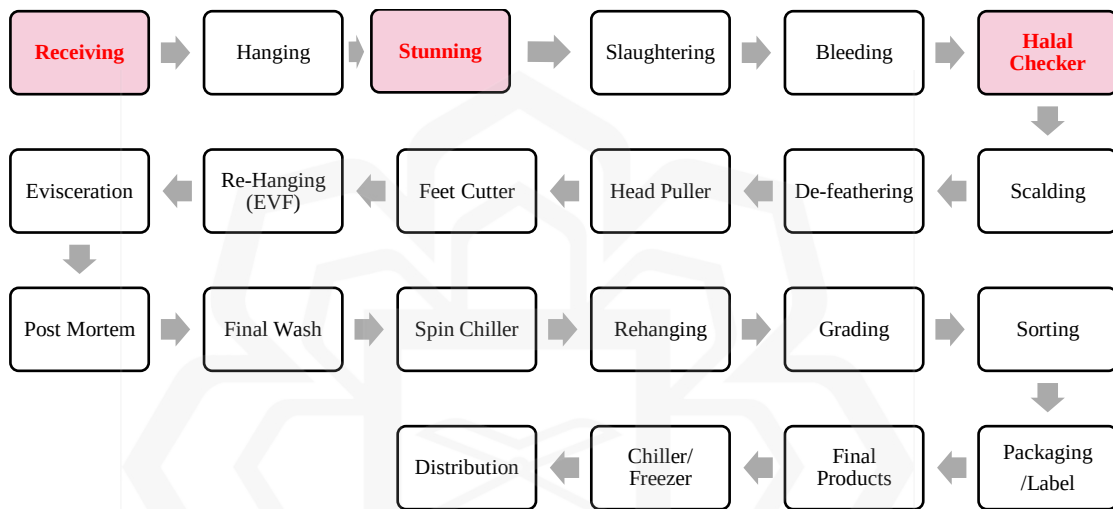


Figure 4.8 Flow Chart of the slaughtering process at Company A

Company A is a large-scale poultry industry. It is one of the main players in Malaysia. They produce more than 10,000 halal chickens per day. Figure 4.8 shows the flow chart of the slaughtering process at Company A. They have 22 steps from the start to the end process. The pink box indicates the halal control points (HCP) for the company. Company A pointed out at least three HCPs which are receiving, stunning and halal checkers.

4.5.2 Company B

Flow Chart of the slaughtering process at Company B

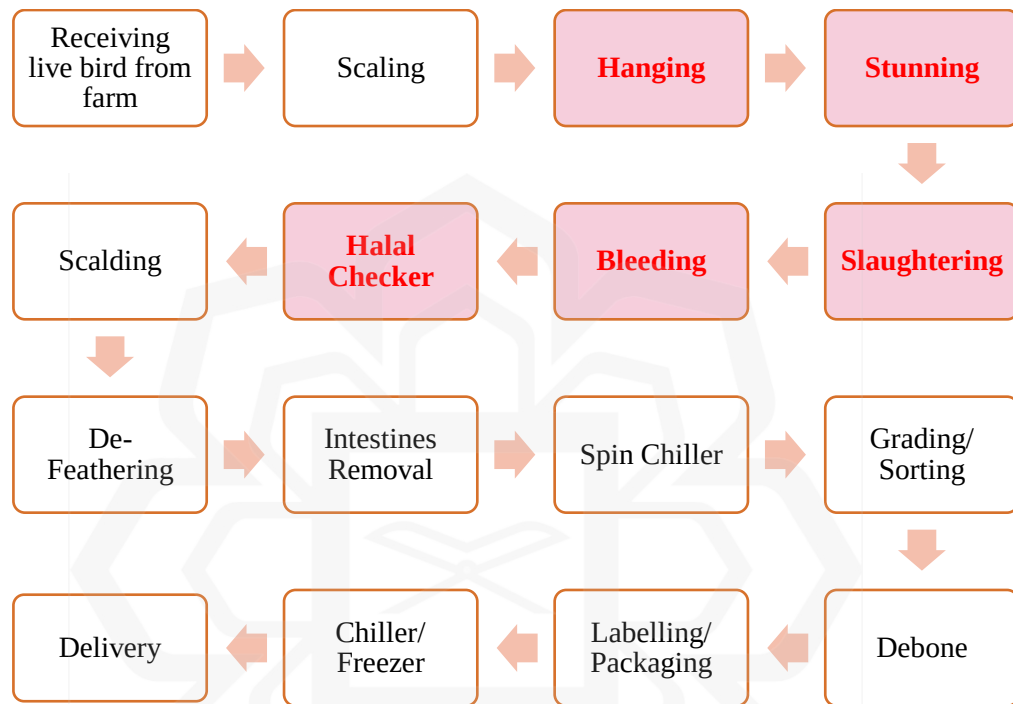


Figure 4.9 Flow Chart of the slaughtering process at Company B

Company B is a medium-scale poultry industry. They produce less than 10,000 halal chickens per day which is around 8000 to 10,000 chickens daily. Figure 4.9 shows the flow chart of the slaughtering process at Company B. They have 16 steps from the start to the end process. The pink box indicates the halal control points (HCP) for the company. Company B pointed out at least five HCPs which are hanging, stunning, slaughtering, bleeding and halal checkers.

4.5.3 Company C

Flow Chart of the slaughtering process at Company C

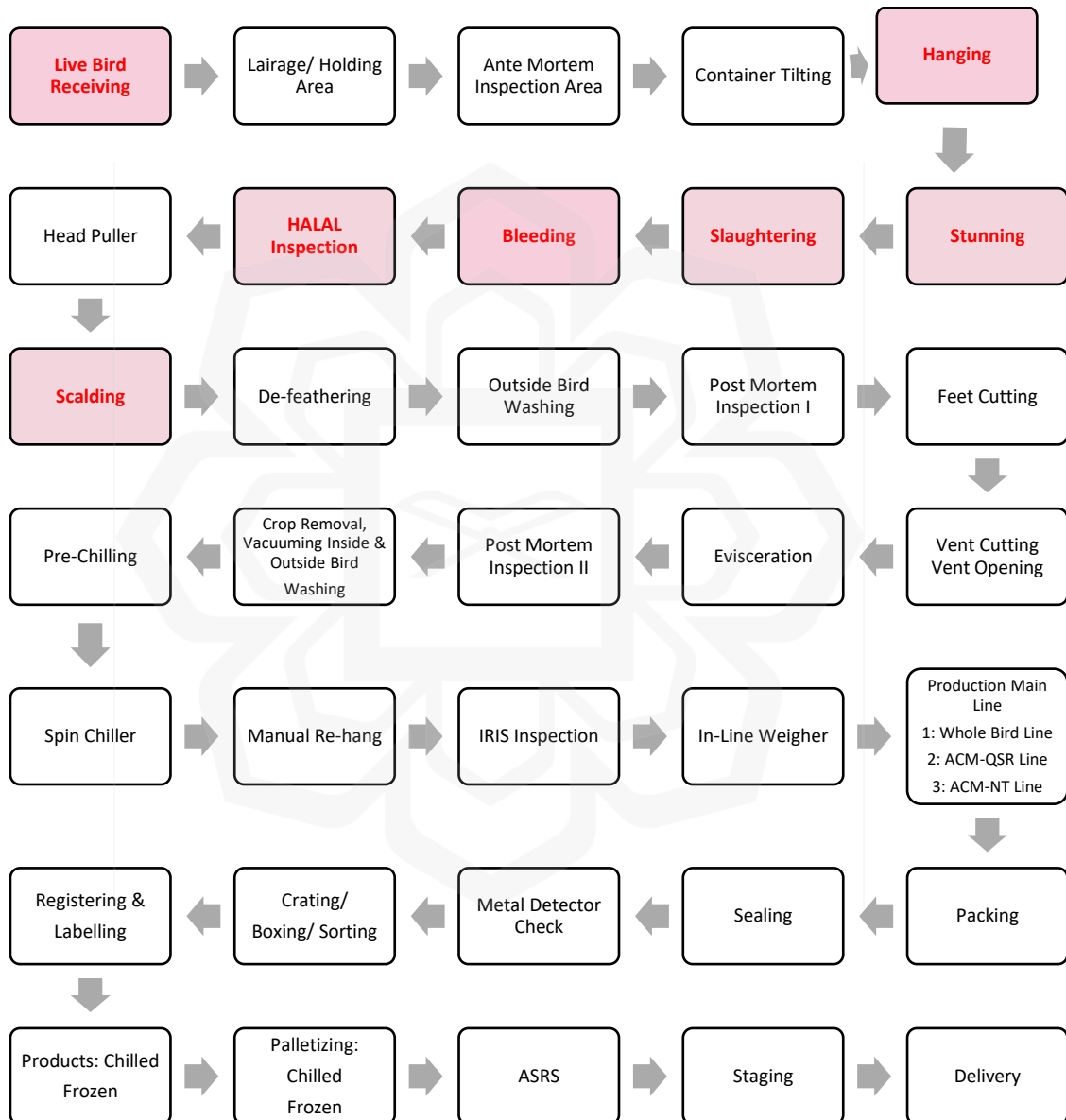


Figure 4.10 Flow Chart of the slaughtering process at Company C

Meanwhile, Company C is also one of the main players in Malaysia. They produce more than 180,000 to 200,000 halal chickens per day which makes them a large-scale poultry industry in Malaysia. Figure 4.10 shows the flow chart of the slaughtering process at Company C. They have 35 steps from the start to the end process. The pink box indicates the halal control points (HCP) for the company. Company C pointed out at least seven HCPs which are receiving, hanging, stunning, slaughtering, bleeding, halal inspection and scalding.

For the scale and production capacity, Company A and Company C both are large-scale operations, but Company C produces significantly more chickens daily compared to Company A. This higher production capacity may necessitate more rigorous and numerous control points to ensure halal compliance due to the increased complexity and volume of operations. Company B, as a medium-scale industry, has fewer production steps and fewer control points compared to Company C but more than Company A. This balance reflects its intermediate production capacity and complexity.

For the process complexity, Company C with 35 process steps, Company C has the most complex operation, which requires more HCPs to monitor various stages meticulously and ensure that the larger volume of production adheres to Halal standards. Company A and B with 22 and 16 steps respectively, their processes are less complex compared to Company C, which corresponds to fewer HCPs needed to monitor critical points in their processes.

All three companies have their specific halal control points. Company A focuses on critical points such as receiving, stunning, and halal checking, which are fundamental to ensuring initial and intermediate compliance. Company B includes additional points like hanging, slaughtering, and bleeding, which might reflect a more hands-on approach at intermediate stages. Company C covers an extensive range of control points from receiving to scalding, showing a detailed approach to monitor every critical stage given their higher production scale and need for thorough oversight.

The differences in the number and type of Halal Control Points (HCPs) among the three companies are influenced by their production scale, process complexity, and specific operational practices. Larger and more complex operations like Company C

require more detailed and numerous HCPs to ensure compliance with halal standards, while medium and smaller-scale operations have fewer control points reflecting their simpler processes. This detailed monitoring is essential to maintain integrity and trust in their halal certification across varying scales of operation.

4.6 FINDINGS AND DISCUSSION

The findings of this research are to answer the research questions and consist of four sections. The first section states findings that appear from the documents of Manual Procedure for Malaysia Halal Certification (Domestic) 2020, Malaysian Standard 1500: 2019 Halal Food: general Requirement (Third revision) which includes the four aspects of the halal integrity concept which are pure, hygiene, safe and quality.

The second section consists of the practice of the halal integrity concept in the context of Halal Poultry Industries in Malaysia based on the four aspects of halal concepts which are pure, hygiene, safe and quality from the three selected case studies.

The third section consists of the determinations of the opportunities that could enhance the integrity of the halal poultry supply chain industries in Malaysia from the expertise of the halal industry in Malaysia.

Last but not least the fourth section is the conceptual framework for practicing integrity in the context of a halal poultry supply chain based on *maqāṣid al-Sharī'ah*.

The data were collected from the interview sessions that were done with eight informants including the industry players, academicians, halal experts and practitioners in Malaysia.

4.6.1 Justification for Selected Halal Integrity Dimensions

The selection of the four halal integrity dimensions purity, hygiene, safety, and quality was informed by several interrelated factors rooted in Islamic principles, Malaysian halal standards, and supporting literature. These dimensions reflect the essential components of the concept of *halalan ṭayiban*, which is central to halal assurance in Islam. According to Qur'an 2:168, Muslims are commanded to consume food that is both lawful (halal) and good (*ṭayib*), emphasizing that food must be clean, safe, pure from contamination, and meet quality standards.

First, the researcher referred to two key regulatory documents used by halal certification authorities in Malaysia: The Manual Procedure for Halal Certification in Malaysia (Domestic) 2020 and MS1500:2019 Halal Food – General Guidelines (Third Revision). These documents highlight the importance of purity (*ṭahārah*), hygiene (*nizāfah*), safety (absence of harmful substances), and quality (in terms of freshness, cleanliness, and consistency).

Second, the literature supports these dimensions as pillars of halal integrity. Studies by Ali et al. (2017), Norasekin (2016) and Ramli et al. (2020) emphasize the operational and spiritual importance of integrating these four dimensions into halal food supply chains, especially in meat and poultry sectors. These elements help prevent contamination, assure consumers, and align with *sharī'ah* compliance throughout the supply process.

Third, the thematic analysis of interviews with halal industry executives validated the relevance of these four integrity dimensions. Informants consistently emphasized the importance of avoiding impurities, ensuring clean environments, meeting safety expectations, and maintaining consistent product quality as key to preserving halal integrity.

Lastly, these dimensions are closely aligned with the objectives of *maqāṣid al-Sharī'ah*, particularly in ensuring the protection of religion (through halal compliance), protection of life (through food safety), protection of intellect (avoiding harmful substances), protection of wealth (preserving market trust), and protection of lineage

(ensuring ethical sourcing). This holistic consideration further supports the robustness and relevance of selecting these four dimensions to evaluate halal supply chain integrity in the poultry industry.

Therefore, the integration of these four dimensions (purity, hygiene, safety, and quality) forms a well-founded framework for the practical assessment of halal supply chain integrity within this study.

4.7 RO 1: THE CONCEPT OF HALAL SUPPLY CHAIN INTEGRITY IN THE CONTEXT OF HALAL POULTRY INDUSTRIES IN MALAYSIA

This section answers the first research question which is to study the concept of halal supply chain integrity in the context of halal poultry industries in Malaysia using the documents analysis of three main documents which are Manual Procedure for Malaysia Halal Certification Domestic (2020) and MS1500 (2019) Halal food - General requirements (Third revision) which include the four aspects for a halal concept which are pure, hygiene, safe and quality.

In analyzing MS1500:2019 and MPPHM (Domestic) 2020, the researcher categorized relevant clauses into four integrity dimensions: purity, hygiene, safety, and quality. While these documents do not explicitly label each clause under a specific integrity category, the classification was guided by thematic relevance, key terminology, and scholarly references.

For instance, clauses discussing avoidance of *najis* and cross-contamination were categorized under purity, while sections emphasizing environmental cleanliness and sanitation procedures were grouped under hygiene. Clauses referring to pathogen control, equipment sterilization, and critical control points were mapped under safety, and those related to product characteristics, freshness, and consistency were placed under quality. This categorization is also consistent with prior literature (Norasekin,

2016; Ramli et al., 2020), which supports the alignment of these themes with halal assurance objectives.

4.7.1 RO 1 Findings

4.7.1.1 Pure

To answer RO 1 in this study, the researcher extracted the data from two main sources that are commonly used in the Malaysian Halal Industry which are the Manual Procedure for Malaysia Halal Certification (Domestic) 2020 and MS1500:2019 Halal Food-General Requirements (Third revision). These documents are used for the document analysis for answering the RQ1. These documents provide comprehensive guidelines on maintaining halal integrity throughout the supply chain process.

To provide a more detailed analysis, the researcher delves into each halal integrity dimension; pure, hygiene, safe and quality and relates those four dimensions to the documents from MPPHM (Domestic) 2020 and MS1500:2019 Halal Food-General Requirement (Third Revision).

The concept of purity (pure) is central to maintaining halal integrity in the poultry supply chain. It ensures that all the aspects of production are free from any form of contamination, and impurities (*najs*) and comply with Islamic law. Here is the detailed analysis of the pure dimension based on the MPPHM Domestic 2020 and MS1500:2019 documents.

Table 4.1 Pure Dimension based on MPPHM (Domestic) 2020 and MS1500:2019

PURE	MPPHM (Domestic) 2020	MS1500:2019 Halal Food- General Requirement (Third Revision)
Animal: Alive (<i>Hayah Mustaqirrah</i>) before slaughter	Animals must be kept alive (<i>hayah al-mustaqirrah</i>) when slaughter is carried out. 1:38 p 50	-
Packaging and Labelling: No misleading label or symbol	-	packaging design, sign, symbol, logo, name and picture shall not be misleading and/or contravening the principles of Shariah law. 2:33 p 16
Premise: No haram material entering	Premises including offices, canteens and workers' residences must be kept free of raw materials and non-halal products such as liquor and pork. 1:9 p 28	-
Processing: Comply with Shariah	All activities related to the preparation and processing of raw materials, products, menus or services must meet the requirements of Shariah Law, laws and the authority. 1:25 p 24	food or its ingredients shall not be processed using any components or products of animals that are non-halal or not slaughtered according to Shariah law and fatwa; 2:25 p 15
Processing: Not using any najis related things	-	Food shall not be processed using anything in any quantity that is decreed as <i>najis</i> by Shariah law and fatwa; 2:26 p 15
Stunning: Monitored regularly by a Muslim employee	The stunning device should always be under the supervision of trained Muslim workers and regularly monitored by competent authorities. 1:40 p 53	-
Stunning: Used water bath for poultry	The electric type of stunning device for poultry (such as chickens and ducks) that is allowed is the water bath type only.	-

	1:41 p 53	
Storage and Transportation: Halal-dedicated vehicles only	-	Vehicles shall be dedicated and appropriate to the type of halal food and satisfy hygiene and sanitation conditions. 2:29 p 16
Tools: Perform Sertu if in contact with <i>najs</i>	-	Devices, utensils, machines and processing aids which were previously used or in contact with <i>najs al-mughallazah</i> shall be washed and sertu as required by Shariah law and fatwa (see Annex A). This procedure shall be supervised and verified by the halal competent authority. 2:18 p 12
Tools: Not from animal hair	-	Use of appliances or brushes from animal hair is prohibited. 2:19 p 13
Tools: Free from <i>najs</i>	-	Devices, utensils, machines and processing aids used for processing halal food shall be designed and constructed to facilitate cleaning and shall not be made of or contain any materials that are decreed as <i>najs</i> by Shariah law and shall be used only for halal food 2:17 p 12
Storage and Transportation: Should be halal labelled	Storage of raw materials, finished products, R&D materials or products, reject items and other materials such as equipment and non-food chemicals shall be segregated and labelled. 1:27 p 25	All halal food that is stored, transported, displayed, sold and/or served shall be categorised and labelled halal. 2:28 p 16

According to MPPHM (Domestic) 2020, before slaughter, all animals must be alive (*hayah mustaqirrah*) to ensure they are in a pure state (1:38 p 50). Poultry producers must ensure that all animals are alive and healthy before slaughter. This involves regular veterinary checks and certifications. Animals that meet these criteria are selected for slaughter to maintain the purity of the halal slaughtering process.

According to MS1500:2019, for packaging and labelling, all the designs, signs, logos, names and pictures shall not be misleading and contravene the principle of Shariah law. This ensures that consumers are not misled about the halal status of the product and that all packaging complies with Islamic principles. Packaging materials that have been selected and designed should be non-toxic and free from any contaminants that could compromise the halal status. Labels that indicate the halal status and include relevant information such as the date of slaughter, can ensure transparency and traceability.

The premises in MPPHM (Domestic) 2020, including offices, canteens and employee residences, must be free from haram materials like alcohol and pork. This ensures that no non-halal substances can contaminate the halal products.

For the processing part, MPPHM (Domestic) 2020 and MS1500:2019, stated that all activities related to the preparation and processing of raw materials, products, menus or services must meet Shariah law, legal requirements and regulations. Food or the ingredients shall not be processed using any components or products from non-halal animals or not slaughtered according to Shariah law and fatwa. Processing facilities should adhere to Islamic methods for slaughtering and processing to ensure compliance with Islamic law. Equipment and tools used in the processing should be regularly inspected and cleaned to prevent any contamination.

Both documents mention the definition of slaughtering in Islam. All slaughtering refers to an act of killing an alive and halal animal by a Muslim through severance of the trachea (*halqum*), oesophagus (*mari'*) and both carotid arteries and jugular veins (*wadajain*) using a sharp tool with the intention to Allah s.w.t. this method ensures that the slaughter is performed humanly and according to Islamic law, maintaining the purity of the process. Hence, only trained Muslim personnel can

conduct the slaughtering process to ensure the process is carried out properly. Tools that are clean and sharp only can be used during the process.

Stunning is a critical process, and it is categorized as a critical point (CP) in the processing part of the halal poultry supply chain. The MPPHM (Domestic) 2020 has outlined specific guidelines for the stunning process, which include regular monitoring by trained Muslim personnel and the use of a water bath-type stunner. Regular monitoring in stunning includes checking the equipment, ensuring the correct voltage and duration of stunning and observing the condition of the poultry after stunning to confirm they are alive before slaughter. Any issues during the process should be documented and promptly addressed to ensure ongoing compliance with the halal standards. MPPHM (Domestic) 2020 specifies the use of the water bath type for stunning poultry. This method involves immersing the heads of the birds in an electrified water bath, which stuns them before slaughter. The voltage and duration of the stunning must be carefully controlled to ensure the poultry are alive at the time of slaughter, which is a critical requirement for halal compliance.

In MPPHM (Domestic) 2020 and MS1500:2019, vehicles shall be dedicated to the appropriate type of halal food only to satisfy hygiene and sanitation conditions. The producers should have a dedicated vehicle for transporting their products to ensure no cross-contamination with non-halal products. All food stored, transported, displayed, sold and served shall be categorized and labelled halal. Clear labelling and proper storage systems must be implemented to maintain purity and integrity throughout the supply chain.

For tools and equipment, MS1500:2019 has stated that all devices, machines and processing aids must be free from *najis* and should be regularly cleaned and maintained to ensure they remain free from any contaminants. If any equipment is contaminated with *najis*, the sertu cleaning process is conducted under the supervision of the halal authority. Moreover, tools made from animal hair or any material considered *najis* are strictly prohibited.

The pure dimension of the halal integrity in the poultry supply chain is rigorously defined in the MPPHM (Domestic) 2020 and MS1500:2019 documents.

These guidelines ensure that every aspect of the supply chain, from the source to the consumer point of purchase complies with Islamic principles and maintains the highest standards of purity of their products. Both documents extensively cover the “Pure” dimension, ensuring strict compliance with halal principles throughout the supply chain. MPPHM (Domestic) 2020 provides more specific procedural details, especially regarding the premises and processing activities. Meanwhile, MS1500:2019 focuses on the prohibition of *najs* and emphasizes the packaging and labelling part.

4.7.1.2 Hygiene

The second dimension of the halal supply chain integrity is hygiene. The hygiene dimension is crucial in maintaining the integrity of the halal supply chain. Ensuring cleanliness and sanitary conditions prevents contamination and upholds the halal status of the products. The guidelines from the MPPHM (Domestic) 2020 and MS1500:2019 Halal Food-General Requirement (Third Revision) provide comprehensive standards for maintaining hygiene in a critical industry like the poultry industry itself. Table 4.2 shows the hygiene dimension based on the MPPHM (Domestic) 2020 and MS1500:2019 Halal Food-General Requirement (Third Revision).

Table 4.2 Hygiene Dimension based on MPPHM (Domestic) 2020 and MS1500:2019

HYGIENE	MPPHM (Domestic) 2020	MS1500:2019 Halal Food- General Requirement (Third Revision)
Employee: Personal Hygiene and attire	Employee clothing should be clean, polite and appropriate. 1:7 p 30	-
Packaging and Labelling: Equipment is not contaminated with <i>najs</i>	-	Not prepared, processed or manufactured using equipment that is contaminated with things that are <i>najs</i> as decreed by Shariah law. 2:31 p 16
Packaging and Labelling: Hygienic packing process	-	The packing process shall be carried out cleanly and hygienically and in sound sanitary conditions. 2:34 p 16
Packaging and Labelling: Materials are free from <i>najs</i>	-	The packaging materials shall not be made from any raw materials that are decreed as <i>najs</i> by Shariah law; 2:30 p 16.
Premise: Far from non-halal farm or plant	-	The premises shall be effectively segregated and well insulated from the pig farm or its processing activities to prevent contamination through personnel and equipment. 2:15 p 12
Premise: Good drainage system	The drainage and drainage system should be in a clean condition and properly maintained. 1:12 p 29	The premises shall be effectively segregated and well insulated from the pig farm or its processing activities to prevent contamination through personnel and equipment. 2:15 p 12
Premise: well-maintained and hygienic	The premises must be in good condition, clean and tidy at all times; Floors, walls, ceilings, fans, air conditioners, windows and doors shall be in clean	The premises shall be kept in good condition, hygienic, and maintained to prevent pest access and to eliminate potential breeding sites. 2:13 p 12

	condition and not contribute to pollution 1:10 p 28	
Processing: Comply with GHP, GMP, VHP	Processing and handling shall meet the requirements of good hygiene practices like GHP and/or good manufacturing practices like GMP. 1:26 p 24	Halal food shall be processed, packed and distributed under hygienic conditions in premises licensed following good hygiene practices (GHP), good manufacturing practices (GMP), veterinary hygiene practices (VHP) or such as specified by the competent authority, MS 1514 or MS 1480 and public health legislation currently in force by the competent authority in Malaysia and/or producing country. 2:40 p 13
Processing: Not using any <i>najs</i> related things	-	Food shall not be processed using anything in any quantity that is decreed as <i>najs</i> by Shariah law and fatwa. 2:26 p 15
Sanitation: Manage waste effectively	Procedures for material disposal and waste disposal must be well managed, and orderly and comply with the laws and regulations of the relevant authorities. 1:18 p 31	Waste should be managed effectively. 2:21 p 13
Tools: All devices, tools etc, should be cleaned and maintained	-	All devices, utensils, machines and processing aids shall be cleaned and maintained regularly. 2:20 p 13
Tools: Free from <i>najs</i>	-	Devices, utensils, machines and processing aids used for processing halal food shall be designed and constructed to facilitate cleaning and shall not be made of or contain any materials that are decreed as <i>najs</i> by Shariah law and shall be used only for halal food. 2:17 p 12

For employee hygiene and conduct, MPPHM (Domestic) 2020 emphasized that employees must maintain personal hygiene and wear appropriate attire to prevent contamination during processing. The guidelines point out that all personnel involved in the handling of poultry must adhere to strict personnel hygiene protocols to ensure no contamination occurs from the handlers themselves. Poultry processing facilities must ensure that employees undergo regular health checks and are trained in personal hygiene practices. Facilities also must provide proper attire such as gloves, hairnets and protective clothing, which are mandatory for all the employees working in the processing areas. Handwashing stations and sanitizing facilities must strategically be placed throughout the processing area to encourage frequent use.

According to MPPHM (Domestic) 2020 and MS1500:2019, the premises must be well-maintained with a good drainage system to prevent water stagnation and contamination. The layout should facilitate a hygienic workflow, ensuring that clean and dirty areas are separated to prevent cross-contamination. Strict controls must be implemented to ensure that no haram materials enter the premises including regular audits and inspections. For the processing activities, all producers must comply with Good Hygiene Practices (GHP), Good Manufacturing Practices (GMP) and Veterinary Health Plan (VHP). All food processing environments should be designed to prevent contamination, with clear guidelines on the use of equipment and materials that are free from impurities (*naajs*).

For tools and equipment used in the processing of halal food, MS1500:2019 emphasized that in the poultry industry, tools and equipment should undergo rigorous cleaning schedules, including procedures for *sertu* if they encounter impurities. Equipment is selected and designed to facilitate easy maintenance and cleaning to ensure hygiene standards and remain free from contaminants.

MS1500:2019 also mentioned sanitation on the effective waste management system waste management in poultry processing plants involves regular removal and proper disposal of waste materials to prevent any buildup that could lead to contamination. Other than that, chemicals used for cleaning and sanitation must be stored safely to prevent any accidental contamination. Hence, sanitation procedures should include measures to prevent physical, biological and chemical contamination.

The hygiene dimension of halal integrity in the poultry supply chain is thoroughly addressed in the MPPHM (Domestic) 2020 and MS1500:2019 guidelines. These documents provide clear requirements for maintaining hygiene at every stage, from employee conduct to premises conditions, sanitation and the use of tools and equipment to ensure the halal integrity is upheld. Both documents address hygiene compressively but MS1500:2019 provides broader guidelines that encompass overall hygiene practices.

4.7.1.3 Safe

The third halal integrity dimension is safe. It ensures that the products are safe for consumption, free from hazards, and comply with both Islamic law and food safety standards Table 4.3 shows the safe dimension based on MPPHM (Domestic) 2020 and MS1500:2019.

Table 4.3 Safe Dimension based on MPPHM (Domestic) 2020 and MS1500:2019

SAFE	MPPHM Domestic (2020)	MS1500:2019 Halal Food- General Requirement (Third Revision)
Animal: Good animal welfare	Animals should be handled properly and ensure that animal welfare should be preserved. 1:39 p 50	-
Employee: Sufficient number of employees for each shift	The number of Muslim workers should be sufficient according to the requirements of the application category 1:6 p 30	The management shall ensure that sufficient resources (i.e. manpower, facility, financial and infrastructure) are provided to implement the internal halal control system. 2:7 p 11
Halal Food: Not hazardous	-	Food is not poisonous or hazardous to health 2:3 p 9
Halal Food: Not intoxicate	-	Food does not intoxicate according to Shariah Law and fatwa. 2:2 p 9
Packaging and Labelling: Date of slaughter and date of processing	-	For primary meat products, the label or mark shall also include the date of slaughter and the date of processing. 2:35 p 17
Packaging and Labelling: Materials are free from <i>najs</i>	-	the packaging materials shall not be made from any raw materials that are decreed as <i>najs</i> by Shariah law. 2:30 p 16
Sanitation: Safely stored harmful chemicals	-	store harmful chemical substances safely and appropriately; 2:22 p 13
Sanitation: Prevent contamination (physically, biologically and chemically)	The environment of the premises must be clean and avoid factors that can pollute the premises 1:19 p 30	Prevent physical, biological and chemical contamination of food. 2:23 p 13
Processing: Food/ingredients are safe to consume	-	processed food or its ingredients shall be safe for consumption, non-poisonous, non-intoxicating and non-hazardous to health. 2:27 p 15

Premise: Proper layout and process flow	The plan layout should avoid cross-contamination, facilitate cleaning activities, facilitate the production or handling process of raw materials and products and comply with the safety and health requirements of employees. 1:11 p 29	The layout of premises shall permit proper process flow, proper employee flow, and good hygienic and safety practices, including protection against pest infestation and cross-contamination between and during operations. 2:14 p 12
Premise: Far from non-halal farm or plant	-	The premises shall be effectively segregated and well insulated from the pig farm or its processing activities to prevent contamination through personnel and equipment. 2:15 p 12
Packaging and Labelling: Non-toxic material	-	The packaging material shall not have any toxic effect on the halal food. 2:32 p 16

Animal welfare is specifically addressed in MPPHM (Domestic) 2020, demonstrating a concern for moral treatment and its effect on food safety. Efficient handling mitigates strain and possible pollutants, conforming to general safety objectives. Animal welfare is not specifically addressed in MS1500:2019; this could be because the standard assumes it is a component of general best practices.

The fact that MPPHM (Domestic) 2020 specifically discusses animal welfare shows that it cares about moral treatment and how it affects food safety. Effective management reduces stress and potential contaminants while adhering to overall safety goals. The absence of a particular mention of animal welfare in MS1500:2019 may be due to the standard's assumption that it is part of general best practices.

To ensure food safety from a health standpoint, MS1500:2019 states unequivocally that halal food cannot be dangerous or intoxicated. The halal principles

are aligned with food safety through a comprehensive strategy, as seen by the specificity of MS1500:2019.

To help guarantee that goods are free of *najis* and non-toxic, MS1500:2019 offers strict packaging regulations that directly improve food safety. To improve traceability and consumer confidence in food safety, it also requires labelling with dates of processing and slaughtering. These particulars are absent from MPPHM (Domestic) 2020, suggesting a less thorough approach in this area.

Sanitation and contamination prevention are emphasized in both documents. To improve overall food safety, MS1500:2019 offers more comprehensive guidelines that specifically address several forms of contamination (physical, biological, and chemical) and the safe storage of hazardous chemicals.

The two documents emphasized the importance of a well-planned facility and an efficient workflow to guarantee food safety. However, further guidelines on segregation are provided by MS1500:2019. The safety dimension of halal integrity in the poultry supply chain is comprehensively addressed in the MPPHM (Domestic) 2020 and MS1500:2019 documents. These rules guarantee that all elements of the supply chain including storage and transportation are planned to uphold the highest standards of safety, including food safety procedures, packaging, sanitation, tools, and equipment. To guarantee the safety of their goods, chicken processing plants in Malaysia follow these strict guidelines through careful design, frequent inspections, and strict adherence to halal certification regulations.

4.7.1.4 Quality

The fourth halal integrity dimension is quality. Quality ensures that halal poultry products meet high standards of taste, texture, nutritional value and overall consumer satisfaction while adhering to halal principles. Table 4.4 shows the quality dimension based on MPPHM (Domestic) 2020 and MS1500:2019.

Table 4.4 Quality Dimension based on MPPHM (Domestic) 2020 and MS1500:2019

QUALITY	MPPHM (Domestic) 2020	MS1500:2019 Halal Food- General Requirement (Third Revision)
Documentation: valid Veterinary Certification Scheme or cert from JPV	Slaughterhouses must possess a Veterinary Certification Scheme or a valid certificate or letter of support from JPV. 1:29 p 48	-
Employee: Sufficient number of employees for each shift	The number of Muslim workers should be sufficient according to the requirements of the application category. 1:6 p 30	-
Employee: Work Ethics and GHP	Must practice the employee code of ethics and Good Hygiene Practices (GHP) as stipulated under the regulations of the relevant authorities. 1:8 p 30	-
Packaging and Labelling: Date of slaughter and date of processing	-	For primary meat products, the label or mark shall also include the date of slaughter; and date of processing. 2:35 p 17
Premise: Proper layout and process flow	The plan layout should avoid cross-contamination, facilitate cleaning activities, facilitate the production or handling process of raw materials and products and comply with the safety and health requirements of employees. 1:11 p 29	The layout of premises shall permit proper process flow, proper employee flow, and good hygienic and safety practices, including protection against pest infestation and cross-contamination between and during operations. 2:14 p 12
Storage and Transportation: Should be halal labelled	Storage of raw materials, finished products, R&D materials or products, reject items and other materials such as equipment and non-food chemicals shall be segregated and labelled 1:27 p 25	All halal food that is stored, transported, displayed, sold and/or served shall be categorised and labelled halal. 2:28 p 16

Training: Halal awareness training all employees in processing and admin part (every 3 years)	Halal awareness training shall be conducted at least once every three (3) years for all employees involved in processing and/or service activities. 1:21 p 31	-
Training: Halal Awareness training for new employees (3 months prior)	Halal awareness training for new employees must be carried out within three (3) months from the date of appointment. 1:20 p 31	-
Training: Halal competency (every 3 years) for IHC	Halal competency training shall be conducted at least once every three (3) years for all members of the Internal Halal Committee officially appointed by the company's top management. 1:22 p 32	-
Training: Regular halal-related training	-	The management shall provide training regularly to relevant personnel on the halal principles and their application. 2:37 p 11

The MPPHM Domestic 2020 emphasizes the importance of veterinary certification, ensuring that the slaughterhouses comply with veterinary health standards. This requirement guarantees that the quality of the poultry is not only halal but also meets animal health and safety standards. This requirement highlights the document's focus on integrating animal health certification with halal integrity, enhancing overall quality assurance in the supply chain.

MPPHM Domestic 2020 states precisely how many Muslim workers must work a shift, guaranteeing that there is always an adequate supply of trained staff to uphold halal standards. Furthermore, the focus on GHP and work ethics emphasizes how crucial moral conduct and good hygiene are to maintaining quality. Without mentioning the number of employees, MS1500:2019 places a strong emphasis on ongoing training

to make sure that all staff members are constantly informed about halal principles, which obliquely supports upholding high standards of quality.

To guarantee quality and prevent cross-contamination, both documents emphasize how crucial correct labelling is. While MS1500:2019 defines the requirement for date marking on primary meat products, which is vital for traceability and quality assurance, MPPHM Domestic 2020 places additional emphasis on the segregation and labelling of diverse components and products. The focus on appropriate labelling procedures guarantees that customers can rely on the halal status and calibre of the products they buy.

Both materials offer thorough instructions on how to maintain high standards of quality in the process flow and layout of the premises. They emphasize how crucial it is to avoid cross-contamination and make sure the design makes it easier to follow safe and effective cleaning procedures. Both criteria help to preserve the overall quality of halal poultry products by making sure that the physical environment promotes safe and hygienic operations.

The Internal Halal Committee and new hires are among the groups for whom MPPHM Domestic 2020 provides specific training criteria, along with the frequency at which various forms of training are to be completed. High quality and compliance are maintained by this methodical approach, which guarantees that all staff members receive sufficient training and up-to-date information on halal practices. MS1500:2019 offers a more generic guideline without defining intervals, but it nevertheless emphasizes the significance of regular exercise. Through constant and extensive training programs, the precise methodology of MPPHM Domestic 2020 may provide more stringent assurance of quality.

Although they perform this using varying emphasis and levels of detail, MPPHM (Domestic) 2020 and MS1500:2019 offer strong foundations for guaranteeing the quality of halal poultry products in Malaysia. MPPHM (Domestic) 2020 provides more precise and comprehensive criteria for training, staff requirements, premise layout, and paperwork. Its emphasis on specific procedural criteria contributes to the overall quality and strict adherence to halal regulations. Meanwhile,

MS1500:2019 offers a more comprehensive framework with broad recommendations for quality control, frequent training, and food safety. It supports MPPHM (Domestic) 2020 by reiterating the fundamentals of halal integrity and overall quality management, even though it is less comprehensive in other areas.

In summary, MPPHM (Domestic) 2020 offers more precise and comprehensive procedural criteria that are necessary to preserve the integrity and quality of halal in Malaysia's chicken supply chain. On the other hand, MS1500:2019 provides a completer and more all-encompassing framework that guarantees thorough quality control and conformity to halal standards in diverse settings. For those involved who want to keep the halal poultry industry's standards high, both agreements are essential.

Table 4.5 below shows the rubric on the Integrity Practice for the Halal Poultry Chain from the four dimensions of pure, hygiene, quality and safety.

Table 4.5 Rubric on the Integrity Practice for Halal Poultry Chain

Halal Poultry Supply Chain Process	Source	Pure	Hygiene	Quality	Safe
Ex-Ante					
• Animal: Alive (<i>Hayah Mustaqirrah</i>) before slaughter	MPPHM Domestic (2020)	✓			
• Animal Welfare	MPPHM Domestic (2020)				✓
• Documentation: Valid Veterinary Certification Scheme or certification from JPV	MPPHM Domestic (2020)			✓	
In Process					
• Employee: Personal Hygiene and Attire	MPPHM Domestic (2020)		✓		
• Employee: Sufficient number of employees for each shift	MPPHM Domestic (2020)			✓	✓

• Employee: Work ethics and GHP	MPPHM Domestic (2020)			✓	
• Halal Food: Not Hazardous	MS1500:2019				✓
• Halal Food: Not Intoxicate	MS1500:2019				✓
• Packaging and Labelling: Date of slaughter and date of slaughtering	MS1500:2019			✓	✓
• Packaging and Labelling: Equipment are not contaminated with <i>najs</i>	MS1500:2019		✓		
• Packaging and Labelling: Hygienic packing process	MS1500:2019		✓		
• Packaging and Labelling: Materials are free from <i>najs</i>	MS1500:2019		✓		✓
• Packaging and Labelling: Non-toxic material	MS1500:2019				✓
• Premise: Far from non-halal farm or plant	MS1500:2019		✓		✓
• Premise: Good Drainage system	MPPHM Domestic (2020) MS1500:2019		✓		
• Premise: Proper layout and process flow	MPPHM Domestic (2020) MS1500:2019			✓	✓
• Premise: Well-maintained and hygienic	MPPHM Domestic (2020) MS1500:2019		✓		
• Processing: Comply with GHP, GMP and VHP	MPPHM Domestic (2020) MS1500:2019		✓		
• Processing: Not using any <i>najs</i> related things	MS1500:2019	✓			
• Processing: Food/Ingredients is safe to consume	MS1500:2019				✓

• Stunning: Monitored regularly by trained Muslim employee	MPPHM Domestic (2020)	✓			
• Stunning: Waterbath type for poultry	MPPHM Domestic (2020)	✓			
• Sanitation: Prevent contamination (physically, biologically and chemically)	MS1500:2019				✓
• Sanitation: Safely stored harmful chemicals	MS1500:2019				✓
• Slaughtering in Islam method	MPPHM Domestic (2020) MS1500:2019	✓			
• Tools: Free from <i>najs</i>	MS1500:2019		✓		
• Tools: Perform sattu if in contact with <i>najs</i>	MS1500:2019	✓			
• Tools: Not from animal hair	MS1500:2019	✓			
• Tools: Not from <i>najs</i>	MS1500:2019	✓			
• Tools: Should be cleaned and well-maintained	MS1500:2019		✓		
Ex-Post					
• Sanitation: Manage waste effectively	MPPHM Domestic (2020) MS1500:2019		✓		
i. Storage and Transportation: Halal-dedicated vehicles only	MS1500:2019	✓			
ii. Storage and Transportation: Should be halal labelled	MPPHM Domestic (2020) MS1500:2019	✓		✓	
iii. Training: Halal awareness training for employees in processing and admin part (every 3 years)	MPPHM Domestic (2020)			✓	
iv. Training: Halal awareness training	MPPHM Domestic (2020)			✓	

	for new employees (3 months prior)					
v.	Training: Halal Competency (every 3 years) for IHC	MPPHM Domestic (2020)			✓	
vi.	Training: Regular halal-related training	MS1500:2019			✓	

Both MPPHM (Domestic) 2020 and MS1500:2019 provide comprehensive guidelines to ensure halal integrity in the poultry supply chain in Malaysia. MPPHM (Domestic) 2020 offered detailed procedural requirements focusing on operational guidelines, halal schemes and specific halal processes. Meanwhile, MS1500:2019 provides a broader framework covering overall food safety, quality assurance and general principles applicable across various contexts. By analyzing these documents, stakeholders can gain a comprehensive understanding of the requirements and ensure the halal integrity of the poultry supply chain in Malaysia

The findings for Research Question 1, centered on the document analysis conducted using Atlas.ti, reveal a comprehensive exploration of integrity practices within the Halal poultry supply chain. This investigation focuses on four primary dimensions: purity, hygiene, safety, and quality. Each of these dimensions represents crucial aspects of Halal integrity, with practices interconnected to uphold Halal standards throughout the supply chain.

To begin with, the purity dimension emphasizes the importance of maintaining halalness and cleanliness in accordance with Islamic guidelines for the poultry industry. Practices within this dimension ensure the Halal status of poultry products by requiring that animals are alive and conscious before slaughter, a process known as *tasmiyah*. Additionally, slaughterers are required to have proper credentials, demonstrating their knowledge and compliance with Halal standards. Specific tools are used to prevent the involvement of any *najis* (impurities) during the slaughtering process, thereby reinforcing the purity of the products at this initial stage.

The second dimension, hygiene, concentrates on maintaining cleanliness throughout the food production process, encompassing equipment, premises, and handling methods. Hygiene practices mandate that premises and tools are well-maintained and free from impurities, reducing the risk of contamination. Packaging materials are also required to meet strict cleanliness standards, ensuring that they do not introduce any contaminants into the products. Furthermore, effective sanitation systems are necessary for efficient waste management, supporting a cleaner and more controlled environment for food processing.

The safety dimension focuses on ensuring that food products are not harmful or intoxicating, adhering to both Islamic and general health standards. Safety practices encompass the sanitation of equipment to eliminate harmful chemicals that could compromise food safety. Additionally, these practices prioritize animal welfare throughout the processing stages, safeguarding both the ethical treatment of animals and the quality of the final product. By implementing these measures, the poultry supply chain mitigates risks that could endanger consumer health or violate Halal principles.

Finally, the quality dimension emphasizes proper training and certification as fundamental to maintaining Halal integrity within the poultry supply chain. Employees receive training in Halal practices, ensuring that they are knowledgeable and skilled in handling Halal products correctly. Storage and transportation practices are strictly monitored to prevent any degradation in product quality. This dimension also mandates comprehensive documentation and certification, including veterinary certifications, to verify compliance with Halal standards and reinforce the quality of Halal products.

In summary, the integrity practices across these four dimensions purity, hygiene, safety, and quality are intricately connected and collectively essential for preserving Halal integrity within the poultry supply chain. These practices not only fulfil religious requirements but also contribute to higher standards of cleanliness, safety, and quality, thus ensuring that consumers receive products that are both Halal and of superior quality. Through this structured approach, the Halal poultry supply chain maintains its commitment to Islamic values while meeting the practical demands of food safety and quality assurance.

4.8 RO 2: THE PRACTICE OF THE APPLICATION OF HALAL SUPPLY CHAIN INTEGRITY IN THE CONTEXT OF HALAL POULTRY INDUSTRIES IN MALAYSIA

As noted in RO 1, in addition to exploring the practice of the application of halal supply chain integrity in the context of halal poultry industries in Malaysia, a series of semi-structured interviews were conducted with the halal executives of the three poultry industries in three different Malaysian states which are Kedah, Perak and Melaka to develop further understanding and contextualize their integrity practice in the halal poultry industries in Malaysia for RO 2. It was expected that the interviews would help the researcher to develop a further understanding of how the application of the halal supply chain integrity is being practiced and how they respond to it in the poultry industries in this country.

The researcher contacted several halal executives from the poultry industries to carry out the semi-structured interviews but eventually, three consented to participate. The informants were symbolised as P1, P2 and P3.

The first section provides the profile of the informants who took part in these multiple case studies interviews. The analysis results suggested that almost all of the halal executives were aware of the halal supply chain integrity practice in the industry despite their different working experiences in the field. As noted in this section, this point was particularly fascinating, although no literature could be found in the Malaysian context that addresses this point in four different dimensions such as pure, hygiene, quality and safe. Furthermore, the interviews also provided more insights into the halal control points, halal integrity issues, and lack of enforcement as these are further discussed below. Above all, the interviews additional information that would extend the expectations toward the halal poultry industries in Malaysia.

4.8.1 Profile of the Informants

Table 4.6 Profile of informants from the poultry industry

Serial Number	Company Name	Education Background	Position	Working Experience in the field	Location
P1	Company A	Bachelor (Shariah)	Halal Executive	9 years	Sungai Petani, Kedah
P2	Company B	Bachelor (Halal Industry)	Halal Executive	4 years	Alor Gajah, Melaka
P3	Company C	Bachelor (Syariah)	Halal Executive	8 years	Manjung, Perak

The practice of the application of halal supply chain integrity in the context of halal poultry industries in Malaysia is based on the requirements from the Manual Procedure of the Malaysian Halal Certification Domestic (2020) and the MS1500:2019 Halal Food- General Requirement Third Revision. The researcher went to three different Poultry Industries in Malaysia which are known as Company A, Company B and Company C to interview their Halal Executives at the respective companies as shown in Table 4.6 above to collect the data to see how the application of the halal supply chain integrity is being practiced. The researcher divided into four aspects which are pure, hygiene, safe and quality. The practices of the halal concept will be based on those four aspects.

4.8.2 RO 2 Findings

4.8.2.1 Pure

This section provides an in-depth analysis and comparison of the halal integrity dimension focusing on the "Pure" aspect, based on interviews from three poultry companies, denoted as P1, P2, and P3. The results can be seen in Table 4.7 below.

Table 4.7 Pure Dimension on Halal Poultry Chain

Pure		P1	P2	P3	Total
Ex-Ante	Halal Feed	✓	✓	✓	100%
	Certified Chicken	✓	✓	✓	100%
In Process	Hanging	✓	✓	✓	100%
	Stunning	✓	✓	✓	100%
	Halal Inspection	✓	✓	✓	100%
Ex-Post	Storage and Transportation: Halal-dedicated vehicles only	✓	✓	✓	100%

Ex-Ante

i) Halal Feed

P1: “Yes here we do not inject any type of antibody for the chicken and all the feed is halal” 1:87 ¶ 29 in P1.

P2: “We don't take injected chicken because if it were injected, the chicken has black wings, so customers don't like it, because we supply a lot close to customers who buy canned food, so the quality is very important for them. That's why we take chickens from MYGAP. The chicken from MYGAP is really good” 2:11 ¶ 25 in P2.

P3: *“So all the requirements from DVS, only the farm is eligible for us to agree to be eligible for us to take chicken from. We do not buy open-market chicken. We have our requirements and standards to take” 3:98 ¶ 21 in P3.*

P1 emphasizes that no antibodies are injected into the chicken, and all feed is halal. P2 highlights that they avoid injected chickens, associate black wings with injections, and prefer chickens from MYGAP-certified farms to ensure quality. Meanwhile, P3 states that they only source chickens from farms that meet DVS standards and do not buy from the open market, ensuring high-quality feed. Prioritizing the use of halal feed, making sure there are no antibody injections, and procuring from approved sources are shared by all three companies. P1 concentrates on feed purity, whilst P2 and P3 particularly stress the need for certifications (MYGAP and DVS). From the start of the supply chain, the chicken will exceed halal criteria due to this constant reliance on halal feed.

ii) ***Certified Chicken***

P1: *“We have contract farming and our farms’ will report if there is any issue regarding the farm. The meeting is held once every 3 months. We also have a representative from the vet department who controls the farm” 1:88 ¶ 23 in P1.*

P2: *“I am in charge of the application and so far no problems regarding that. All our chickens are from a company certified by MYGAP. MYGAP is to prove that the chicken is good for consumption. And all our chicken is also approved by GVHP. GVHP is like a cert we need to prove the quality of our chicken, so MYGAP is under GVHP” 2:5 ¶ 13 in P2.*

P3: *“We broke in two. One own farm, one contract farm. For one day at least 70% come from our farm. 30% from the contract farm. We have agreed with a contract farm. Only farms that follow or get the standard from the veterinarian, such as MYGAP cert, have a poultry license. So, all the requirements from DVS, only the farm is eligible for us to agree to be eligible to take chicken from. We do not buy open-market chicken. We have our requirements and standards to take” 3:4 ¶ 21 in P3.*

P1 uses contract farming and regular meetings with vet department representatives to ensure farm compliance. P2 relies on MYGAP and GVHP certifications to ensure the quality and safety of their chickens. P3 utilizes both own and contract farms, ensuring that all farms have the necessary certifications like MYGAP. All three companies demonstrate a strong commitment to sourcing from certified suppliers. P1 relies on internal monitoring and regular vet department involvement, while P2 and P3 emphasize external certifications (MYGAP and GVHP). This practice ensures that the chickens are halal-certified and meet quality standards before entering the processing phase.

In Process

i) Hanging

P1: “We have a grading line. Chickens will hang on the grading line and will be kicked according to size. It is automatic. For example, a size of 1.5 or 1.6kg will go into the container” 1:91 ¶ 72 in P1.

P2: “Our first Halal Critical Point (HCP) is hanging, because we need to see the condition of the chicken if it is ok or not” 2:14 ¶ 33 in P2.

P3: “And then, we focus on hanging, if we look at halal there is animal welfare (animal welfare), for hanging we control hanging not too rough, hanging the right way, the upper legs and the lower legs, all the legs are in the shackle, so most importantly it's not dead or weak. If the chicken dies, we label it DOA (Dead on arrival), it is not allowed to be hung at all, even weak birds are not allowed to be hung because if they enter the stunner, it will eventually die. Die because of the stunner, not because of the slaughter” 3:17 ¶ 41 in P3.

P1 implements an automatic grading line to ensure proper handling and size categorization of chickens. P2 identifies hanging as a critical control point (HCP) to assess the condition of the chicken. P3 focuses on humane hanging practices to prevent stress or death before stunning, with a system to label and manage DOA (Dead on Arrival) birds. All three companies have robust hanging procedures to ensure the chickens' well-being and proper handling. P1 uses automation, P2 focuses on condition assessment as a critical control point, and P3 emphasizes humane handling to prevent

the processing of weak or dead chickens. These practices align with halal requirements for animal welfare and proper handling.

ii) **Stunning**

P1: *“We use a water bath stunner. The voltage used depends on the size of the chicken. We use 60. Before this, we used 40-60v. that's the machine before the one we upgraded. Now we upgrade 28-70v. It depends on the size. For now, we put 1-2.0kg (28.40v), 2.0-2.50kg (38.8v), 2.5-3.0kg (47v), 3.1-4kg (58.7v), 4kg and above (69.0v). if we don't monitor the size, it will cause the chicken to die” 1:9 ¶ 33 in P1.*

P2: *“This is stunning with voltage, we will record, before, during and after. He follows the type of chicken. Now we rarely slaughter broilers because the price of broilers is expensive, now we focus on breeders and layers. So, this breeder is big, his voltage is quite high, he will follow the situation if the chicken does not wake up after stunning, we will reduce the voltage if it follows this standard 5.9v, 5.7v under 6v. if the breeder is big and old, so 6v-7v” 2:23 ¶ 39 in P2.*

P3: *“Usually, we use a minimum of 28v for the smallest chicken, size s, and a maximum of 38v for a slightly larger chicken. In daily practice, we will accept M and L-size chickens 1.5-2.5kg. for the two sizes, we use 32-34v. for large breeder chickens, usually, the chickens are 6-7kg. will use 42-46v. the bigger the taller he is. If you look at it, the stunner is not efficient because you can see the chicken moving, but not flapping, because that's what we want, not being silent or not moving, we don't want to stun the chicken, we just want to weaken the chicken” 3:45 ¶ 69 in P3.*

P1 uses a water bath stunner with variable voltage based on chicken size to prevent death before slaughter. P2 records stunning parameters before, during, and after, adjusting voltage based on chicken type and size. P3 uses specific voltages for different sizes, ensuring chickens are only weakened, not killed, before slaughter. Stunning practices across all three companies are carefully regulated, with voltage adjustments based on the size and type of chicken to ensure compliance with halal requirements. P1

and P2 focus on recording and adjusting voltage, while P3 emphasizes minimal stunning to maintain chicken consciousness before slaughter, ensuring halal compliance.

iii) Halal Inspection (Halal Checker)

P1: “The second critical part is the halal checker. He has two duties. The first is to check for any 'wrong cut'. Second, he has to make sure that the slaughtered chicken is dead before entering the tank. If the chicken is not dead, he will put the chicken in the basket let the chicken bleed completely and then hang it back” 1:15 ¶ 40 in P1” 1:15 ¶ 40 in P1.

P2: “Third HCP is slaughtering, we will look at the slaughtering according to shariah or not because sometimes our slaughterers make the wrong cut because of that there will be a halal checker to make sure the chicken is safe and comply according to shariah, if not we will reject the chicken. This halal checker is also the fourth HCP” 2:17 ¶ 33 in P2.

P3: “Halal checker, the work of people who check the wrong cut bird is not broken. We usually put 6-7 people. People will take turns. Everyone has a certificate and knows whether a vein is broken or not. It's just an hour of people's work. We have a system here. At one time there are 4 people. The first person the chicken starts to reach the task is to check if the vein is broken, if he sees someone who wants to lift the chicken out of the shackle, he is the 2nd person. While he looks to see if it is broken” 3:64 ¶ 101 in P3.

P1 ensures that their halal checker confirms correct cuts and that chickens are dead before processing further. P2 also mentioned that their halal checker monitors slaughtering compliance with Shariah, rejecting non-compliant chickens. P3 employ multiple halal checkers to verify correct cuts and ensure veins are properly severed, rotating staff to maintain focus and accuracy. Halal inspection practices are rigorous across all companies, with dedicated halal checkers ensuring compliance with halal slaughter requirements. P1 and P2 focus on verifying correct cuts and ensuring death before scalding, while P3 employs multiple checkers to maintain thorough oversight. These practices ensure the integrity of the halal process during slaughter.

Ex-Post

i) **Storage and Transportation: Halal-dedicated vehicles only**

P1: *“We do have a truck but it doesn't necessarily mean that he can drive all the time. We do have the one we have but for emergency planning. The statement is that the company (rented vehicle) has never brought goods that are not halal” 1:97 ¶ 111 in P1.*

P2: *“We have 4 lorries, still use our own vehicle. The rent is 25k a month. That's why we don't take outside trucks, a lot of process. That's why I don't take risks, I don't like risks. Part of auditing, don't like argument” 2:145 ¶ 117 in P2.*

P3: *“So sometimes the goods are ok, but we were worried about our supplier's truck. The truck they send is mixed with other goods. So, we have to deal with security, if there is a supplier to send the ingredients to the people will check, whether it is mixed or not like a non-halal product, but for delivery we use our own vehicle” 3:103 ¶ 41 in P3.*

All three companies are consistent in using dedicated vehicles for transporting halal products, which is crucial for maintaining the purity and integrity of the halal supply chain. This practice ensures that the halal status of products is preserved from processing to delivery. Additional safety measures also be taken from P1 and P3 which stated that they will always look at plan B in case of emergency. The measures must be quick and need to make sure they do not breach the halal standards even though there will be some emergency. This showed that they are reliable and competent in making decisions.

4.8.2.2 Hygiene

The second integrity dimension is hygiene. In this part, the researcher looks into a few important parts of the poultry supply chain. The details can be seen in Table 4.8.

Table 4.8 Hygiene Dimension on Halal Poultry Chain

Hygiene		P1	P2	P3	Total
In Process	Used of Chlorine	✓	✓		66.7%
	Rejected Poultry	✓	✓	✓	100%
	Poultry's Blood Handling	✓	✓	✓	100%
Ex-Post	Sanitation	✓	✓	✓	100%

In Process

i) Used of Chlorine

P1: “We used chlorine for the chicken to kill the bacteria. It's just that the general public's sentiment when they hear about chlorine is always negative they think chlorine is a dangerous chemical” 1:92 ¶ 70 in P1.

P2: “We use chlorine tabs. Like a pill. Enter in 5-7 pills. To make sure the chicken is free from the bacteria. The quality. Its chlorine is safe to consume. Used to kill bacteria like E-coli and salmonella. No issue here. It's just that the quality is more precise than halal because halal has quality, it's more for tayyiban, meaning that if it's clean, there's no problem” 2:82 ¶ 99 in P2.

P1 uses chlorine to kill bacteria on chicken, acknowledging public sentiment concerns but affirming its safety. P2 uses chlorine tabs to eliminate bacteria like *E. coli* and *Salmonella*, emphasizing the importance of cleanliness in halal and *tayyiban* principles. Meanwhile, P3 does not explicitly mention the use of chlorine, indicating a different approach to bacterial control. P1 and P2 both use chlorine as a sanitizing agent to ensure the poultry is free from harmful bacteria, highlighting its role in meeting both halal and *tayyiban* standards. P3 does not mention chlorine use, which may reflect either alternative sanitization methods or a focus on different hygiene practices. The sentiment around chlorine use shows a balance between ensuring cleanliness and addressing public perception.

ii) Rejected Poultry

P1: “For chickens that are rejected, there will be a third party that will come and pick them up. Chinese companies will take, to feed catfish” 1:27 ¶ 51 in P1.

P1: “If the chicken is cooked too badly like dirty water absorbs it to the inside, we will remove it. So that's our action, we pack, and we will label the chicken as cooked chicken. We will give this cooked chicken to the customers of the crocodile park, they will take it. That's the issue for over scalding. It always happens when the machine stops” 1:94 ¶ 55 in P1.

P2: “We throw away all the rejected chicken. Not for sale to anyone. If we follow the halal SOP, we choose not to supply it to anyone. We will throw it away” 2:12 ¶ 31 in P2

P3: “For diseased chicken, there we will call a team of 2-3 people to make a selection, and manually select which ones are okay to hang on the rail, and which ones are not okay to be rejected and we will dispose it all of including the dead ones” 3:40 ¶ 52 in P3.

According to P1, rejected chickens are picked up by a third party for alternative uses like feeding catfish or customers like crocodile parks. Actions are taken for over-scalding issues. For P2, rejected chickens are disposed of and not sold, adhering strictly to halal SOPs. Meanwhile according to P3, diseased and dead chickens are manually selected and disposed of, ensuring no compromised poultry is processed. All three companies have stringent practices for handling rejected poultry, ensuring that compromised chickens are not re-entered into the food chain. P1's practice of reallocating rejected poultry to non-food uses versus P2 and P3's complete disposal aligns with their interpretation of maintaining halal integrity.

iii) Poultry's Blood Handling

P1: “If the chicken is not dead, we will put the chicken in the basket and let the chicken bleed completely and then hang it back. So the blood we have drainage system here” 1:95 ¶ 40 in P1.

P2: “Usually the things that people highlight like blood are seen as dirty, and the blood comes out in the barrel. Because we will put the blood in one basket because there are customers who take blood. Some customers take chicken blood for fertilizer. We don't sell it, we just give it away, that's why the auditor sees that as critical. Bleeding is seen to be critical even though I say it's normal” 2:61 ¶ 75 in P2.

P3: “So bleeding is really not an issue. If bleeding, we take the bleeding time between 4-5 minutes. Then it goes down the drainage system and we soon clean it” 3:101 ¶ 97 in P3.

P1 ensures complete bleeding of chickens, with a drainage system in place to manage blood. P2 collects blood in baskets for customers who use it as fertilizer, maintaining that this practice meets cleanliness standards. P3 manages bleeding with a set time for complete bleeding and the blood goes down the drain ensuring thorough cleaning. Effective blood handling practices are crucial for hygiene and halal compliance. All companies ensure that blood is fully drained and properly managed. P2's practice of giving away blood for fertilizer highlights a sustainable approach, whereas P1 and P3 focus on ensuring proper drainage and sanitation.

Ex-Post

i) Sanitation:

P1: “For cleaning and sanitation, we do a thorough cleaning at the end of the process after we finish with all the chickens. We use chemical sanitizers” 1:98 ¶ 111 in P1.

P2: “For sanitation, we clean our processing area every day because we deal with blood every day and need to make sure our processing area is okay. We also do comprehensive cleaning that involves sanitization of the equipment” 2:146 ¶ 131 in P2.

P3: “We clean it at least every day. we have a few steps to sanitize the area. we use detergents and make sure we rinse with water all the filth and blood, especially at the slaughtering area” 3:104 ¶ 89 in P3.

For the sanitation part, P1 appears to focus more on post-processing sanitation with the use of chemical sanitizers, ensuring cleanliness after all chickens are processed. P2 emphasizes daily sanitation due to continuous exposure to blood, indicating a proactive approach to maintaining cleanliness throughout daily operations, including equipment sanitization. P3 shows a detailed approach to sanitation, particularly in high-risk areas like the slaughtering area, using detergents and thorough rinsing to remove filth and blood. Each statement provides insight into the sanitation practices tailored to their specific operational needs and risks. While all three emphasize regular cleaning, P2 stands out with its daily routine and comprehensive approach, likely due to the consistent exposure to blood. P3, on the other hand, focuses explicitly on the effectiveness of cleaning agents and thorough rinsing, especially in critical areas. P1's approach, while comprehensive after processing, might benefit from more frequent cleaning details. Overall, each approach reflects a commitment to maintaining hygiene standards but varies in emphasis and detail based on operational requirements and risk factors.

4.8.2.3 Safe

The third integrity dimension is safe. In this part, the researcher looks into a few important parts of the poultry supply chain. The detailed discussions are presented below in Table 4.9.

Table 4.9 Safe Dimension on Halal Poultry Chain

Safe		P1	P2	P3	Total
Ex-Ante	Animal Welfare	✓	✓	✓	100%
In Process	Stunning	✓	✓	✓	100%
	Sharp Knife	✓	✓	✓	100%
	Used of Chlorine	✓	✓		33.33%
Ex-Post	Training and Awareness	✓	✓	✓	100%
	Logistic	✓	✓	✓	100%

Ex-Ante

i) Animal Welfare

P1: “We received our chicken early in the morning. We start slaughtering at 6 am until finish all the chicken usually for our capacity about 13 to 14 lorry we will finish around 2 pm until 4 pm. We need to make sure the chicken we received is fresh and they did not suffer from the Malaysian heat” 1:90 ¶ 31 in P1

P2: “Usually the chicken will arrive at night or a little early at 5 am-6 am like that. And at 8 am the slaughter started. We usually need to make sure the chicken arrives in the morning so it is still fresh, and not many will die. Usually, if the chicken is weak or has been in the coop for too long, it will be weak, so the tendency to die quickly after the stunner is very high. We have to make sure the chicken dies because of slaughter and not because of stunner” 2:144 ¶ 19 in P2.

P3: “Our shift usually starts at 4 am and we finish at 2:30 pm to 3 pm. So there is animal welfare there on arrival where we make sure that they do not die because of the hot weather. Also, during hanging, there is animal welfare. We control the hanging so it is not too rough. Hanging the right way. The most important thing is they are not dead and the chickens were hanged. If a dead chicken is labelled DOA (dead on arrival), it is not right at all to be hung” 3:102 ¶ 89 in P3.

For animal welfare, P1 receives chickens early in the morning to prevent suffering from heat and ensures they are fresh. P2 also ensures chickens arrive early to maintain freshness and reduce mortality rates, particularly from stunning. P3 also manages shift timings to prevent heat-related deaths and ensures proper handling during hanging. All companies prioritize animal welfare by scheduling early deliveries and careful handling to minimize stress and mortality. P1, P2, and P3 demonstrate strong compliance with animal welfare standards, ensuring that chickens are treated humanely throughout the process.

In Process

i) Stunning

P1: *“We use a water bath stunner. The voltage used depends on the size of the chicken. We use 60. Before this, we used 40-60v. that's the machine before the one we upgraded. Now we upgrade 28-70v. It depends on the size. For now, we put 1-2.0kg (28.40v), 2.0-2.50kg (38.8v), 2.5-3.0kg (47v), 3.1-4kg (58.7v), 4kg and above (69.0v). if we don't monitor the size, it will cause the chicken to die” 1:9 ¶ 33 in P1.*

P2: *“This is stunning with voltage, we will record, before, during and after. He follows the type of chicken. Now we rarely slaughter broilers because the price of broilers is expensive, now we focus on breeders and layers. So, this breeder is big, his voltage is quite high, he will follow the situation if the chicken does not wake up after stunning, we will reduce the voltage if it follows this standard 5.9v, 5.7v under 6v. if the breeder is big and old, so 6v-7v” 2:23 ¶ 39 in P2.*

P3: *“Usually, we use a minimum of 28v for the smallest chicken, size s, and a maximum of 38v for a slightly larger chicken. In daily practice, we will accept M and L-size chickens 1.5-2.5kg. for the two sizes, we use 32-34v. for large breeder chickens, usually, the chickens are 6-7kg. will use 42-46v. the bigger the taller he is. If you look at it, the stunner is not efficient because you can see the chicken moving, but not flapping, because that's what we want, not being silent or not moving, we don't want to stun the chicken, we just want to weaken the chicken” 3:45 ¶ 69 in P3.*

In Stunning, P1 uses a water bath stunner with voltage settings adjusted for different chicken sizes, ensuring they do not die from stunning. P2 records voltage settings for different chicken types and adjusts as necessary to ensure chickens do not die from stunning. P3 uses specific voltage settings based on chicken size to weaken but not kill the chickens, ensuring proper stunning practices. All companies use voltage-controlled stunning to ensure chickens are weakened but not killed, maintaining compliance with halal standards. P1, P2, and P3 adjust voltages based on chicken size and type, demonstrating a tailored approach to stunning.

ii) Sharp Knife

P1: “So far, we will indeed look at the criteria for washing knives. Every time it is slaughtered, it must be washed. We have put a shower it is automatic. It's just that sometimes you have to look at the shower angle. The knives we need to make sure it is sharpened before it is being used” 1:89 ¶ 47 in P1.

P2: “For slaughtering there will be three slaughterers that will recite the Bismillah. The shower is on top of their head to clean the knife every time they are slaughtered. They need to make sure the knives are in a good condition to be used for slaughtering” 2:27 ¶ 43 in P2.

P3: “Like a knife, it is not as sharp as it was at the beginning of slaughter. Each butcher here will be supplied with two blades of knives. So, within 45 minutes, people will use two knives. Other equipment such as sharpening machines is provided. If the person goes out for 45 minutes, for example, A exits then B enters, A will stand by to sharpen the knife, and will check the knife again. We also provide a machine to sterilize the knife” 3:52 ¶ 77 in P3.

For tools, all slaughtering processes must use sharp knives. P1 ensures knives are sharpened and washed before each use with automatic showers in place. P2 maintains knife cleanliness and sharpness, with showers to clean knives after each slaughter. P3 provides two knives per butcher, with regular sharpening and sterilizing machines available. All companies prioritize the use of sharp knives to ensure humane and efficient slaughtering. P1, P2, and P3 have established protocols for maintaining knife sharpness and cleanliness, aligning with halal and quality standards.

iii) Used of Chlorine

P1: “We used chlorine for the chicken to kill the bacteria. It's just that the general public's sentiment when they hear about chlorine is always negative they think chlorine is a dangerous chemical” 1:92 ¶ 70 in P1.

P2: “We use chlorine tabs. Like a pill. Enter in 5-7 pills. To make sure the chicken is free from the bacteria. The quality. Its chlorine is safe to consume. Used to kill bacteria like E-coli and salmonella. No issue here. It's just that the

quality is more precise than halal because halal has quality, it's more for tayiban, meaning that if it's clean, there's no problem" 2:82 ¶ 99 in P2.

P1 uses chlorine to kill bacteria, addressing public concerns about its safety. P2 uses chlorine tablets to ensure chickens are free from bacteria like E. coli and Salmonella, emphasizing its safety and necessity for *tayiban*. Both P1 and P2 use chlorine to ensure bacterial safety in their chickens, highlighting its effectiveness and safety for consumption. P3 does not mention the use of chlorine.

Ex-Post

i) Training and Awareness

P1: "We give the training. If halal is also included in the induction training, for new employees we will give training like QA, Safety, halal, and HR, these four departments, no doubt we will give induction training. After that, if you follow the MPPHM, after three years, we need to train the workers again for the awareness training. For awareness training, it is in terms of theory, the other is OJT (On Job Training). For example, slaughtering, if there are a lot of wrong cuts, we will keep them, and give OJT again" 1:63 ¶ 105 in P1.

P2: "For halal competency, I send it to top management every 3 years. For halal awareness once a year. For food handling, we do once every two years" 2:42 ¶ 59 in P2.

P3: "We also provide halal awareness training for our employees and we include that with GMP with halal as well" 3:79 ¶ 130 in P3.

For training and awareness, P1 provides induction training covering QA, safety, halal, and HR, with periodic awareness and 'On Job Training' (OJT) training. P2 conducts halal competency training for top management every three years, halal awareness annually, and food handling training biennially. P3 offers halal awareness training, integrated with GMP, for all employees. Consistent training and awareness programs across all companies ensure that employees are well-informed and competent in maintaining safety and halal standards. P1, P2, and P3 show a systematic approach

to training, with regular updates and specific focus areas such as halal practices and food handling.

ii) Logistic

***P1:** “For logistics, we use our transportation. To date, we have 21 trucks and 3 containers. The one with the chiller” 1:53 ¶ 91 in P1.*

***P2:** “So we have 4 trucks, still use our vehicle. Rent 25k a month with a chiller. That's why we don't take outside trucks, a lot of process. I don't like risk. Part of auditing, don't like arguments” 2:97 ¶ 117 in P2.*

***P3:** “Security will check the condition of the lorry, after entering the gate, there will be SV someone who will receive the goods, automatically he will know the halal standards and requirements for receiving the goods. If there is an issue, he will call us, if there is no issue then go to the warehouse. So far there are no issues, if there are any issues regarding GMP, such as leaks, or torn packaging, that's fine. There is no halal issue so far” 3:33 ¶ 45 in P3.*

P1 uses own transportation with chillers to ensure proper handling. P2 uses own vehicles with chillers, avoiding external trucks to minimize risks. P3 ensures logistics compliance with halal standards, with security checks and GMP adherence. Effective logistics management is crucial for maintaining safety post-production. All companies manage their transportation to ensure proper handling and temperature control, demonstrating a commitment to safety and minimizing risks associated with third-party logistics.

4.8.2.4 Quality

The fourth integrity dimension is quality. In this part, the researcher looks into a few important parts of the poultry supply chain. The detailed discussions are presented in Table 4.10.

Table 4.10 Quality Dimension on Halal Poultry Chain

Quality		P1	P2	P3	Total
Ex-Ante	Certified Chicken (MyGAP)	✓	✓	✓	100%
In Process	Ante-Mortem	✓		✓	66.7%
	Sharp Knife	✓	✓	✓	100%
	Computerized- System			✓	33.4%
Ex-Post	Logistic	✓	✓	✓	100%
	Temperature	✓	✓	✓	100%
	Training and Awareness	✓	✓	✓	100%

Ex-Ante

i) **Certified Chicken**

P1: “We have contract farming and our farms. HQ will report if there is any issue regarding the farm. The meeting is held once every 3 months. We also have a representative from the vet department who controls the farm” 1:88 ¶ 23 in P1.

P2: “I am in charge of the application and so far no problems regarding that. All our chickens are from a company certified by MYGAP. MYGAP is to prove that the chicken is good for consumption. And all our chicken is also approved by GVHP. GVHP is like a cert we need to prove the quality of our chicken, so MYGAP is under GVHP” 2:5 ¶ 13 in P2.

P3: “We broke in two. One own farm, one contract farm. For one day at least 70% come from our farm. 30% from the contract farm. We have agreed with a contract farm. Only farms that follow or get the standard from the veterinarian, such as MYGAP cert, have a poultry license. So all the requirements from DVS, only the farm is eligible for us to agree to be eligible to take chicken from. We do not buy open-market chicken. We have our requirements and standards to take” 3:4 ¶ 21 in P3.

P1 ensures contract farming and regular reporting with veterinary department oversight. P2 mentioned that all of their chickens are from MyGAP-certified farms, also

approved by GVHP, ensuring quality and safety. Meanwhile, P3 utilizes both own farms and contract farms, with strict adherence to MyGAP and veterinary standards, avoiding open-market chickens. All three companies comply with MyGAP certification, ensuring their chickens meet stringent quality standards. P1, P2, and P3 emphasize rigorous oversight and certification processes to guarantee the quality of their poultry, demonstrating a strong commitment to maintaining high standards from the source to the point of consumer purchase.

In Process

i) Ante-Mortem

P1: “Process before hanging to check the health of the chicken in the basket is ante-mortem. If there are chickens that are sick or injured, they need to be isolated and placed in a basket. Can't hang on the line. The chicken will have emergency slaughter to reduce the pain” 1:18 ¶ 42 in P1.

P3: “We have an anti-mortem process. In this process we take samples, for example, in one chicken truck there are 3000 chickens, and in 3000 chickens we take 20 chickens. So, we will check whether the chicken is healthy, ill or not, old enough to be slaughtered, not too small, not too big. The chicken should be free from all diseases” 3:16 ¶ 41 in P3.

P1 conducts ante-mortem inspections to check the health of chickens, isolating and humanely slaughtering any sick or injured birds. Meanwhile, P3 takes samples from each truckload to check the health and suitability of chickens for slaughter. Ante-mortem inspections in P1 and P3 ensure that only healthy chickens are processed, preventing the entry of diseased or unfit poultry into the supply chain. P2 does not mention ante-mortem inspections, which could indicate a different focus or reliance on other quality assurance measures.

ii) Sharp Knife

P1: “So far, we will indeed look at the criteria for washing knives. Every time it is slaughtered, it must be washed. We have put a shower it is automatic. It's just that sometimes you have to look at the shower angle. The knives we need to make sure it is sharpened before it is being used” 1:89 ¶ 47 in P1.

P2: “For slaughtering there will be three slaughterers that will recite the Bismillah. The shower is on top of their head to clean the knife every time they are slaughtered. They need to make sure the knives are in a good condition to be used for slaughtering” 2:27 ¶ 43 in P2.

P3: “Like a knife, it is not as sharp as it was at the beginning of slaughter. Each butcher here will be supplied with two blades of knives. So, within 45 minutes, people will use two knives. Other equipment such as sharpening machines is provided. If the person goes out for 45 minutes, for example, A exits then B enters, A will stand by to sharpen the knife, and will check the knife again. We also provide a machine to sterilize the knife” 3:52 ¶ 77 in P3.

P1 ensures knives are sharpened before use, with automatic washing systems in place. P2 also maintains good condition of knives, with regular cleaning and checks during slaughtering. While P3 provides two knives per butcher, with regular sharpening and sterilizing equipment available. All companies prioritize the use of sharp knives to ensure humane and efficient slaughtering. P1, P2, and P3 have established protocols for maintaining knife sharpness and cleanliness, aligning with halal and quality standards.

iii) Computerized System

P3: “We are the largest poultry company in Malaysia with a modern-computerized system. With it, we managed to slaughter 18,000 chickens per hour and for 180,000-200,000 chickens per day.” 3:9 ¶ 17 in P3.

P3 utilizes a modern computerized system to process up to 200,000 chickens per day efficiently. P3's implementation of a computerized system represents an advanced approach to processing, enhancing efficiency and consistency in maintaining quality. P1 and P2 do not mention computerized systems, which may reflect a more manual approach or different technological investments.

Ex-Post

i) Logistic

P1: “For logistics, we use our transportation. To date, we have 21 trucks and 3 containers. The one with the chiller” 1:53 ¶ 91 in P1.

P2: “So we have 4 trucks, still use our vehicle. Rent 25k a month with a chiller. That's why we don't take outside trucks, a lot of process. I don't like risk. Part of auditing, don't like arguments” 2:97 ¶ 117 in P2.

P3: “Security will check the condition of the lorry, after entering the gate, there will be SV someone who will receive the goods, automatically he will know the halal standards and requirements for receiving the goods. If there is an issue, he will call us, if there is no issue then go to the warehouse. So far there are no issues, if there are any issues regarding GMP, such as leaks, or torn packaging, that's fine. There is no halal issue so far” 3:33 ¶ 45 in P3.

P1 utilizes its own transportation with 21 trucks and 3 containers, all equipped with chillers. P2 uses 4 trucks with chillers, avoiding external trucks to minimize risks. P3 ensures logistics compliance with halal standards, with security checks and GMP adherence. Effective logistics management is crucial for maintaining quality post-production. All companies manage their transportation to ensure proper handling and temperature control, demonstrating a commitment to quality and minimizing risks associated with third-party logistics.

ii) Temperature

P1: “For the final product, we will place it in the chiller and freezer. For chillers, the product will be placed in the chiller, the frozen will be placed in the freezer. The chiller product temperature is 0-4 degrees Celsius, for the freezer –18 degrees Celsius. Records will be taken every three hours” 1:47 ¶ 83 in P1.

P2: “Temperature -25 for blast freezer, cold room -18, chill room -5. We do first in first out if it is already frozen in the blast room for 3 hours. If there is an urgent customer, we put it in the blast room to distribute. Usually, two or three days. We just follow the demand” 2:87 ¶ 103 in P2.

P3: “The temperature for scalding is 58 degrees to 63 degrees and for chiller and freezer we used 0-4 degrees and -18 degrees. That’s how we monitor the quality of our product” 3:73 ¶ 117 in P3.

P1 maintains specific temperatures for chillers (0-4°C) and freezers (-18°C), with records taken every three hours. P2 uses blast freezers (-25°C), cold rooms (-18°C), and chill rooms (-5°C), following first-in-first-out practices. P3 keep the temperatures for scalding (58-63°C), chillers (0-4°C), and freezers (-18°C) to ensure product quality. Precise temperature control is essential for maintaining poultry quality and safety. P1, P2, and P3 all have stringent temperature monitoring and control systems, ensuring their products remain within safe and optimal conditions throughout the supply chain.

iii) Training and Awareness

P1: “We give the training. If halal is also included in the induction training, for new employees we will give training like QA, Safety, halal, and HR, these four departments, no doubt we will give induction training. After that, if you follow the MPPHM, after three years, we need to train the workers again for the awareness training. For awareness training, it is in terms of theory, the other is OJT (On Job Training). For example, slaughtering, if there are a lot of wrong cuts, we will keep them, and give OJT again” 1:63 ¶ 105 in P1.

P2: “For halal competency, I send it to top management every 3 years. For halal awareness once a year. For food handling, we do once every two years” 2:42 ¶ 59 in P2.

P3: “We also provide halal awareness training for our employees and we include that with GMP with halal as well” 3:79 ¶ 130 in P3.

P1 provides induction training covering QA, safety, halal, and HR. Conducts awareness training every three years and OJT for specific tasks like slaughtering. P2 conducts halal competency training for top management every three years, halal awareness annually, and food handling training biennially. P3 offers halal awareness training, integrated with GMP, for all employees. Consistent training and awareness programs across all companies ensure that employees are well-informed and competent

in maintaining quality and halal standards. P1, P2, and P3 show a systematic approach to training, with regular updates and specific focus areas such as halal practices and food handling.

Overall, P1, P2, and P3 exhibit strong compliance with quality standards, integrating comprehensive practices to ensure the integrity of their halal poultry supply chains. Their commitment to certification, training, inspections, equipment maintenance, and post-production logistics highlights their dedication to delivering high-quality, safe, and halal-compliant poultry products.

4.8.3 Conclusion

For pure dimension P1, P2, and P3 all emphasize early morning receipt of chickens and proper handling to ensure animal welfare, with slight variations in timing and process specifics. Each plant uses adjustable voltage stunning to weaken rather than kill chickens, with variations in voltage ranges based on chicken size and type. Maintaining sharp knives through washing, sharpening, and sterilizing systems is consistent across all three plants. Regular training and awareness programs are a priority in all plants, with slight differences in training frequency and integration with other quality di. Both P1 and P2 use chlorine for food safety, addressing public concerns and ensuring compliance with *tayiban* standards. While there are slight differences in the specifics of their processes, P1, P2, and P3 share common goals and practices in maintaining halal integrity and ensuring food safety throughout their operations.

P1 demonstrates a comprehensive approach to hygiene, using chlorine for bacterial control, reallocating rejected poultry, ensuring proper blood drainage, and managing waste effectively. Their practices balance public sentiment and halal standards. P2 emphasizes strict adherence to halal SOPs by disposing of rejected poultry and using chlorine tabs for bacterial control. The collection of blood for fertilizer indicates a sustainable practice while maintaining hygiene. P3 focuses on humane and thorough processes, with manual selection of rejected poultry and ensuring proper

bleeding times. Chlorine use is not mentioned, indicating possible alternative methods. Overall, all three companies exhibit a strong commitment to maintaining halal integrity through comprehensive hygiene practices, ensuring both compliance with halal standards and public health requirements.

For the quality dimension, P1 demonstrates a thorough approach to quality with certified chicken, regular training, ante-mortem inspections, sharp knife protocols, and effective logistics and temperature control. P2 emphasizes certification, comprehensive training, knife maintenance, and precise temperature control, with a slightly different focus on the disposal of rejected chickens and a lack of ante-mortem inspection details. P3 incorporates advanced technology with a computerized system, along with robust certification, training, ante-mortem inspections, knife maintenance, and logistics and temperature management. Overall, P1, P2, and P3 exhibit strong compliance with quality standards, integrating comprehensive practices to ensure the integrity of their halal poultry supply chains. Their commitment to certification, training, inspections, equipment maintenance, and post-production logistics highlights their dedication to delivering high-quality, safe, and halal-compliant poultry products.

For safe dimensions, P1 demonstrates a thorough approach to safety with animal welfare, voltage-controlled stunning, sharp knife protocols, comprehensive training, and effective use of chlorine. P2 emphasizes animal welfare, voltage-controlled stunning, knife maintenance, extensive training, and chlorine use, with a focus on *tayiban*. P3 incorporates advanced stunning practices, robust knife maintenance, comprehensive training, and stringent logistics and temperature management. Overall, P1, P2, and P3 exhibit strong compliance with safety standards, integrating comprehensive practices to ensure the integrity and safety of their halal poultry supply chains. Their commitment to animal welfare, proper stunning, knife maintenance, training, and effective logistics highlights their dedication to delivering safe, high-quality, and halal-compliant poultry products.

All three companies demonstrate a high level of compliance with halal standards across all stages of the supply chain. The commitment to maintaining the halal integrity of their products is evident in their detailed procedures and adherence to both internal and external standards. These practices ensure that the poultry products from P1, P2,

and P3 are pure, safe, and compliant with halal requirements, maintaining consumer trust and meeting religious standards.

4.9 RO 3: THE OPPORTUNITIES FOR ENHANCING THE HALAL SUPPLY CHAIN INTEGRITY IN THE CONTEXT OF HALAL POULTRY INDUSTRIES IN MALAYSIA

4.9.1 Introduction

This section answers the third research objective which is to explore the opportunities to enhance the halal supply chain integrity in the context of halal poultry industries in Malaysia. the researcher conducted a semi-structured interview with five different halal experts in Malaysia to provide their insights and give additional information that would extend the expectations toward the halal poultry industries in Malaysia.

4.9.2 Profile of the Informants

The researcher contacted several halal experts to carry out the semi-structured interviews. Eventually, five experts consented to participate, which was acceptable to reach the saturation for RO 3 of this study. The informants were symbolized as P4, P5, P6, P7 and P8. These five informants have come out with brilliant and useful suggestions on how to enhance the integrity of the halal supply chain in the context of poultry industries in Malaysia based on their experience and knowledge.

The researcher approached several halal experts to participate in semi-structured interviews. Ultimately, five experts consented to be interviewed, which was deemed sufficient based on the principle of data saturation which is no new or significant insights were emerging beyond the fifth interview. In qualitative research, particularly

in studies using purposive sampling, a small but knowledgeable sample can provide rich and meaningful data (Guest et al., 2006). These experts, symbolized as P4, P5, P6, P7, and P8, offered valuable suggestions for strengthening the integrity of the halal poultry supply chain in Malaysia, based on their professional experience and domain knowledge.

The informants were selected based on their professional background in the halal sector, expertise and position in the field. All the informants involved in this research phase are academicians, Halal Advisors, Halal Auditor, Halal Trainers and Halal Officers who have manifested high educational backgrounds and wide exposure and experience in the Halal sector within and outside their current institutions.

The informants' positions and roles vary from the CEO of a company to higher executive positions. They are among the prominent and credible experts responsible for promoting and protecting the halal industry in Malaysia and outside Malaysia. Table 4.11 shows the job profile of the informants who participated in the semi-structured interview.

Table 4.11 Profile of the Informants for RQ 3

Serial Number	Company Name	Education Background	Position	Working Experience in the field
P4	HDC	Bachelor Degree	Halal Consultant and Advisor	11 years
P5	IMP	Bachelor Degree	Head of Compliance of Shariah Department	18 years
P6	LLB International	PhD	CEO of LLB and Adjunct Professor	26 years
P7	JHEAIK	Bachelor Degree	Enforcer	6 years
P8	UNITI	Master Degree	Halal Trainer	16 years

Table 4.11 shows five professional halal informants from various halal institutions in Malaysia who contributed to this research phase. Each informant has wide experience of more than 6 years in the halal sectors. Their current roles and experiences have assisted and contributed major contributions to the researcher in gaining deep insights into their perspective on the suggestions to enhance the integrity of the halal supply chain, especially in the context of halal poultry industries in Malaysia. Consequently, they are appropriate and reliable for the researcher to gain the right amount of information and input on this particular topic.

4.9.3 RO 3 Findings

The researcher used thematic analysis to analyze the results for the RO 3. The interpretation and explanation of this research's findings have resulted in a few subthemes connected to the opportunities in enhancing the halal supply chain integrity in the context of the halal poultry industry in Malaysia that were classified under four crucial aspects such as Government regulations and oversights, halal traceability and transparency, industry collaboration and best practices, consumer confidence and education. These can be seen in Figure 4.11 on how the researcher composed the main idea in communicating the third RO.

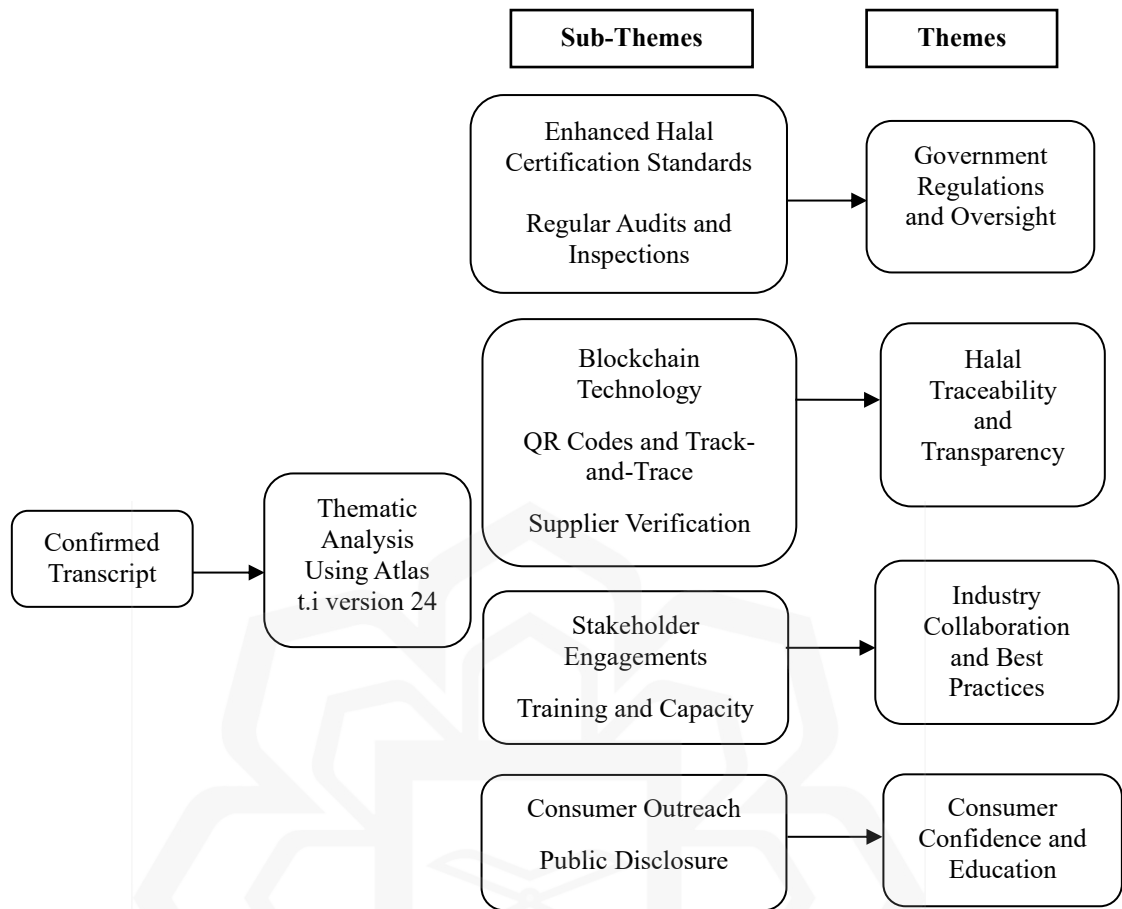


Figure 4.11 Themes and Sub-themes for RO 3

4.9.3.1 Government Regulations and Oversight

The viewpoints of different informants (P4 to P8) on two important subthemes in this theme are discussed in Table 4.12 which are enhanced halal certification standards and regular audits and inspections. These are essential to see how governments can help to enhance the integrity of the supply chain industry in Malaysia.

Table 4.12 Themes and Sub-themes of Government Regulations and Oversight

Themes: Government Regulations and Oversight	Sub-themes	
	Enhanced Halal Certification Standards	Regular Audits and Inspections
P4	✓	✓
P5	✓	✓
P6	✓	✓
P7		✓
P8		✓
Total %	60	100

Enhanced Halal Certification Standards

The enhanced halal certification standards refer to the need for comprehensive, clear, and practical guidelines that cover all aspects of the halal supply chain, from slaughtering to distribution. Informants discuss the current standards, their comprehensiveness, and areas for improvement.

P4: *“There are many things about slaughtering, but the standard needs to be comprehensive and user-friendly. Because of our experience in making this halal standard, it needs to be general. So when you make this new standard, we are afraid that it will become a white elephant “gajah putih” because it is already redundant from MS 1500. But don't worry, the Malaysian Standards Department can do standards on animal feed instead”* 4:56 ¶ 1915 – 1935 in P4.

P5: *“Every country has their halal standards, for Malaysia is MS, the Standard should be more comprehensive and we have a lot to refer to like halal regulatory framework, act, order, manual and guidelines and so many available books that can be downloaded online”* 5:10 ¶ 145 – 147 in P5.

P6: *“There is no real halal supply chain standard. The MS Class 2400 is a standard for transportation, warehousing and retailing. So, these are components of the supply chain. It is not the end-to-end supply chain. If we talk about poultry, we need to rely on the MS 1500. And transportation and*

storage should be segregated from non-halal, but it doesn't tell you how. And how to communicate it. Also, the MS 1500 is not a comprehensive standard for a halal supply chain. Although it suggests that halal should be segregated from non-halal, it doesn't tell you where the control points in your supply chain” 6:11 ¶ 18 in P6.

P6: *“Prescriptive suggestions. On the supply chain now. It suggests segregating halal from non-halal. There where it starts. So I think we need some protocols and best practices for the supply chain” 6:26 ¶ 56 in P6.*

The majority of the informants (60%) which are P4, P5 and P7 agreed that halal certification standards need to be enhanced by the government to improve the integrity of the halal poultry chain industry in Malaysia. P4 emphasizes the need for halal standards to be comprehensive and user-friendly. They express concern that new standards may become redundant if they overlap significantly with the existing MS1500 standard. P4 suggests focusing on specific areas like animal feed standards instead. P5 highlights that while Malaysia has its halal standards (MS), these need to be more comprehensive. They point out the existing regulatory frame of works, acts, orders, manuals, and guidelines that can serve as references. P6 notes the lack of a true halal supply chain standard. They mention MS 2400, which addresses components of the supply chain like transportation and warehousing, but not the entire end-to-end process. They call for more detailed protocols and best practices specific to the halal supply chain.

There is a consensus among informants that current halal certification standards in Malaysia need to be more comprehensive. P4 and P5 agree that while there are existing standards, they need to be more user-friendly and exhaustive. P6 identifies gaps in the standards, particularly in covering the entire supply chain comprehensively.

Regular Audits and Inspections

Halal standards compliance must be ensured by routine audits and inspections. Informants talk about the various roles that audits play, how often and what kinds of audits are conducted, and the difficulties that come with it.

P4: “Enforcement from JAKIM, like the audit that they do now and then is important, especially in this critical scheme like poultry” 4:62 ¶ 623 – 629 in P4.

P5: “There was a case where JAKIM did the audit in one poultry house where a lot of chicken died because of stunning, I found this shocking and that is why JAKIM need to do more audits, especially ambush audits to see the real scenario in this critical industry” 5:14 ¶ 196 – 197 in P5.

P6: “So we need to work on protocols, we need to work on contract clauses, audits need to take place, professional audits, government control, and also the government can conduct audits. There will be suggestions to enhance... Yeah, so Jakim takes audit, we also have the consumer, right? But other ministry writers also take food safety audits in restaurants because they miss your health, I think. So you have different organizations that take audits” 6:39 ¶ 32 in P6.

P7: “I used to do an ambush audit with my team in this one poultry industry and they were so surprised with our visit. I am afraid if we did announce our visit, things would get more like an act rather than the actual scenario” 7:9 ¶ 15 in P7.

P8: “The NCR obtained does not reflect whether the industry is compliant or not. Many factors contribute to the state of the audit and monitoring. Integrity is difficult to measure based on conjecture because it is an attitude and it is not a measurable skill” 8:21 p 8 in P8.

All of the informants (100%) agreed that conducting regular audits and inspections could enhance the integrity of the halal poultry chain industry in Malaysia. P4 acknowledges the importance of JAKIM's enforcement through audits, particularly in the poultry sector, which they consider a critical scheme. P5 recounts an incident where a JAKIM audit revealed issues in a poultry house, emphasizing the need for more frequent and possibly unannounced audits to capture the true state of compliance. P6 calls for the development of protocols, contract clauses, and the involvement of multiple entities, including the government, in conducting audits. They highlight the role of

professional audits and the necessity of audits from various organizations to ensure food safety. P7 shares their experience of conducting an ambush audit, underscoring the element of surprise to ensure that audits reflect the actual practices in the industry. P8 points out that the non-conformance reports (NCRs) from audits may not fully reflect compliance. They stress that integrity is challenging to measure and is more about attitude than measurable skills.

Informants agree on the necessity of regular audits and inspections to maintain halal integrity. P4 and P5 emphasize the critical role of JAKIM, advocating for more frequent and unannounced audits. P6 highlights the need for structured protocols and involvement from various entities, while P7 supports ambush audits to ensure genuine compliance. P8 raises a critical point about the limitations of audits in measuring integrity, suggesting a need for more qualitative assessments. The thematic analysis reveals a strong consensus among informants on the need for enhanced halal certification standards and robust audit practices to ensure the integrity of the halal poultry supply chain in Malaysia.

4.9.3.2 Halal Traceability and Transparency

Blockchain technology and supplier verification have been analyzed in Table 4.13. These sub-themes are essential for ensuring traceability and transparency within the halal poultry supply chain

Table 4.13 Themes and Sub-themes of Halal Traceability and Transparency in Malaysia

Themes: Halal Traceability and Transparency	Sub-themes	
	Blockchain Technology	Supplier Verification
P4	✓	✓
P5		✓
P6	✓	✓
P7	✓	✓
P8	✓	✓
Total %	80	100

Blockchain Technology

Blockchain technology offers a promising solution for enhancing traceability and transparency in the halal supply chain. This technology ensures that record every step of the supply chain on an immutable ledger, providing a clear and auditable trail from production to the point of consumer purchase.

P4: “Blockchain is one of the ledgers in electronic form, so it is more or less to cater for traceability and also transparency When we talk about traceability and we say we touch on transparency This thing involves halal integrity” 4:10 ¶ 180 – 183 in P4.

P6: “I think we need to identify slaughtering as an important halal control point. And there is in the general food law already requirements regarding traceability, right? So, I think the current system of food law regarding traceability is already sufficient. I don't think we need to go overboard for that. The reason why we should not create a national hardship is written in the Holy Quran. So, it's a very slippery slope if we want to play with” 6:7 ¶ 16 in P6.

P7: “If it is for the whole chicken, we can see it skeptically at the supermarket. They have a label so we can trace it. But the issue is for the cut chicken. It mixes with other parts as well. Sometimes we have no label so hard for us to trace” 7:4 ¶ 11 in P7.

***P8:** “The big producers should use a computerized system and have halal traceability so it's easy to check and trace if there are any issues” 8:2 p 5 in P8.*

Four informants (80%) agreed that blockchain technology could enhance the integrity of the halal poultry chain in Malaysia. P4 highlights the role of blockchain as an electronic ledger that significantly enhances both traceability and transparency, which are crucial for maintaining halal integrity. P6 acknowledges the importance of identifying key halal control points, such as slaughtering, within the traceability system. They note that while current food laws on traceability are sufficient, there is a need to balance these requirements without creating undue hardship. P7 points out practical challenges in traceability, particularly with cut chicken parts that often lack labelling, making it difficult to ensure traceability in supermarkets. P8 advocates for the use of computerized systems by large producers to facilitate halal traceability, ensuring that any issues can be easily tracked and addressed.

The informants collectively recognize the potential of blockchain technology in enhancing halal traceability and transparency. P4 and P8 are particularly enthusiastic about the benefits of electronic and computerized systems for maintaining halal integrity except for P5. P6 underscores the sufficiency of current food laws but suggests a careful approach to avoid excessive burdens. Meanwhile, P7 highlights specific traceability challenges, particularly with cut chicken parts, emphasizing the need for more effective labeling and tracking systems.

Supplier Verification

For halal certification agencies to guarantee the integrity of the chicken supply chain, suppliers must undergo a stringent evaluation. This includes facility audits of suppliers, tracking of the status of halal certification, and routine inspections to verify continued adherence to halal regulations. Businesses can reduce the risk of unintentional contamination or non-compliance with halal requirements at any level of manufacturing by keeping an open and auditable supply chain. Supplier verification is crucial for ensuring that every link in the halal supply chain adheres to halal standards. This involves thorough audits of suppliers, documentation of their halal certification status, and routine inspections to confirm ongoing compliance.

P4: *“There is a movement of the product So, the supply chain is “non-stick”. That's a misconception that I got a lot from people. Indeed, this supply chain is not about the movement of the product, it is not storage Not stories, it is not transportation but it's bigger than that There's sourcing of raw material is a very essential part of the supply chain where people always take it for granted. Need to make sure the information of the supplier is been documented. Including how would they deliver the raw materials as well”* 4:70 ¶ 1841 – 1852 in P4.

P5: *“Meat mostly handled by cartel. Industry halal handled by non-Muslim 80% in Malaysia. Many chicken suppliers are from Thailand and most of the feed is from the USA 70% GMO based on corn oil. These showed how important to choose the right supplier. Need to verify all of it. 5:28 ¶ 96 – 100 in P5.*

P6: *“I do audits for big companies throughout their supply chain to check halal from source to point of consumer purchase. So, we're looking at the contracts the brand owner has with their suppliers. So, halal should be founded on contracts, and contracts have halal clauses and tayyiban clauses, we need to have specialized clauses in contract with supply chain partners, especially the supplier”* 6:41 ¶ 16 in P6.

P7: *“When we do an audit, we always check all the documents. It is proof that we ask for an invoice where they buy the products etc. So we have to ask the supplier as well on where they purchase or get their products too. So we check at the documentation if it is tally or not with what they have been declared on the system”* 7:25 ¶ 9 in P7.

P8: *“Slaughter is more guaranteed both in terms of shariah and in terms of other legislation. Have an additional supply of halal resources. That is why the industry needs to check who is their supplier because the first step is critical”* 8:28 p 4 in P8.

All informants (100%) agreed that supplier verification could enhance the integrity of the halal poultry chain industry in Malaysia. P4 emphasizes that supplier

verification is not just about product movement but also involves sourcing raw materials. They stress the importance of documenting supplier information and delivery methods. P5 raises concerns about the involvement of non-Muslim entities in the halal meat industry and the significant role of foreign suppliers. They highlight the importance of verifying suppliers to ensure compliance with halal standards. P6 discusses the importance of conducting audits throughout the supply chain, from sourcing to consumer purchase. They emphasize that halal compliance should be embedded in contracts with specific clauses for halal and *tayyiban* (pure) standards. P7 describes their auditing process, which includes verifying supplier documentation and ensuring it matches the declared information. They stress the need for thorough documentation checks. P8 emphasizes the critical role of suppliers, particularly in the slaughtering process, and the necessity of verifying their halal credentials from the outset.

The informants collectively noted the importance of rigorous supplier verification to maintain halal integrity. P4 and P6 focus on the documentation and contractual aspects of supplier verification. P5 highlights the complexity added by foreign and non-Muslim suppliers, stressing the need for stringent checks. P7 and P8 emphasize the practical aspects of audits and the critical role of initial supplier verification.

This analysis reveals a strong consensus among informants on the necessity of blockchain technology and stringent supplier verification to enhance halal traceability and transparency in the poultry supply chain. Informants recognize the potential of blockchain to provide an immutable and transparent record of the halal supply chain. While some, like P6, caution against overcomplicating the system, others, such as P4 and P8, advocate for the adoption of computerized systems to ensure thorough traceability.

There is unanimous agreement on the importance of supplier verification. Informants highlight the need for comprehensive documentation, thorough audits, and contractual clauses to ensure suppliers comply with halal standards. P5 and P6 emphasize the challenges posed by foreign suppliers and the importance of embedding halal compliance in supply chain contracts.

Overall, leveraging blockchain technology and implementing rigorous supplier verification processes are crucial steps towards maintaining the integrity of the halal poultry supply chain in Malaysia. These measures will enhance transparency, traceability, and consumer confidence in halal-certified products.

4.9.3.3 Industry Collaboration and Best Practices

In this analysis, the researcher put into the perspectives of various informants (P4 to P8) on two critical subthemes: stakeholder engagements and training and capacity building. These subthemes are essential for fostering collaboration and implementing best practices within the halal poultry supply chain in Malaysia.

Table 4.14 Themes and Sub-themes of Industry Collaboration and Best Practices

Themes: Industry Collaboration and Best Practices	Sub-themes	
	Stakeholder Engagements	Training and Capacity Building
P4	✓	✓
P5		✓
P6		
P7	✓	
P8	✓	✓
Total %	60	60

Stakeholder Engagements

Industry collaboration plays a crucial role in enhancing halal standards and practices in Malaysia's poultry supply chain. Stakeholders, including poultry producers, processors, halal certification bodies, and government agencies, collaborate through forums, working groups, and advisory committees to develop and implement best practices. This collaboration fosters alignment on halal standards, facilitates knowledge sharing, and addresses emerging challenges collectively.

P4: “Mostly for big companies nowadays they collaborate with stakeholders. Some with foreign companies as well. We can learn from an investment company that towards ESG. And hopefully, poultry industries are more towards Halal and ESG in the future” 4:71 ¶ 1471 – 1480 in P4.

P7: “That is why initiatives like forums or get together with the stakeholders are very important. We need to see and learn from all points of view on what needs to be improved. I know monitoring alone is not enough as we also short in staff to go monitor few times” 7:26 ¶ 11 in P7

P8: “Collaboration between various parties including the government, entrepreneurs, and halal certification bodies also plays an important role in developing the halal poultry industry in Malaysia. With this overall positive trend, the halal chicken industry in Malaysia is expected to continue to grow and contribute to the country's economy” 8:29 p 3 in P8.

P4 emphasizes the importance of collaborations, particularly with foreign companies and those invested in Environmental, Social, and Governance (ESG) criteria. They suggest that poultry industries should align more closely with halal and ESG principles. P7 highlights the importance of forums and gatherings with stakeholders to gain multiple perspectives and identify areas for improvement. They acknowledge that monitoring alone is insufficient due to staffing limitations. P8 underscores the role of collaboration between government, entrepreneurs, and halal certification bodies in developing the halal poultry industry. They see this collaboration as vital for the

industry's growth and economic contribution. Meanwhile, P5 and P6 did not provide any comment on stakeholder engagements.

The informants recognize the importance of stakeholder engagement in enhancing halal standards and practices. P4 and P8 emphasize collaboration with various parties, including foreign companies and government bodies, to learn and integrate best practices. P7 stresses the need for forums and gatherings to share knowledge and address challenges collectively. There is a consensus that such engagements are crucial for continuous improvement and maintaining the integrity of the halal poultry supply chain.

Training and Capacity Building

Training and capacity building are essential for ensuring that all employees in the halal poultry supply chain understand and uphold halal standards. This includes training foreign workers who may have different cultural understandings of halal and ensuring continuous awareness and education.

P4: "Management needs to provide training at all levels because halal supply chain integrity does not only involve one department, it also involves every department like ordering raw materials and so on. They also have different backgrounds so it is important to make sure all the employees understand the importance of it" 4:60 ¶ 486 – 490 in P4.

P5: "Foreign workers also need to have proper halal training and awareness. Because different countries might interpret different understandings of halal and integrity in the workplace. Because of different cultures. The different intention might only because of business and profit alone" 5:4 ¶ 203 in P5

P8: "For me, it is necessary to ensure that workers are given continuous training and awareness about the halal industry and other knowledge. With systematic training planning, it can help employees to maintain their minds, especially to face work pressure" 8:18 p 6 in P8.

P4 emphasizes that training should be provided at all levels within the management to ensure that all departments understand the importance of halal supply chain integrity. They highlight that employees come from different backgrounds, making training crucial. P5 points out the necessity of proper halal training for foreign workers, who may have different cultural understandings and intentions. They stress that training is important to align everyone with the halal standards and integrity required. P8 highlights the need for continuous training and awareness for workers about the halal industry. They believe that systematic training can help employees maintain focus and manage work pressure effectively.

The informants unanimously agree on the importance of training and capacity building. P4 and P8 emphasize the need for continuous and comprehensive training across all levels to ensure that all employees understand and uphold halal standards. P5 highlights the specific need for training foreign workers to bridge cultural differences and ensure a unified understanding of halal principles. Continuous training is seen as a crucial element in maintaining the integrity and effectiveness of the halal poultry supply chain.

This analysis reveals a strong consensus among informants on the necessity of industry collaboration and best practices through stakeholder engagement training and capacity building.

The informants emphasized the importance of collaboration with various stakeholders, including foreign companies, government agencies, and halal certification bodies. Such engagements are seen as vital for knowledge sharing, addressing challenges, and aligning on best practices to enhance halal standards. There is unanimous agreement on the importance of continuous and comprehensive training for all employees in the halal poultry supply chain. Informants highlight the need for training at all levels, including foreign workers, to ensure a consistent understanding of halal principles and maintain the integrity of the supply chain.

Overall, fostering industry collaboration and investing in training and capacity building are critical steps towards enhancing the integrity of the halal poultry supply chain in Malaysia. These measures will ensure that all stakeholders are aligned on best

practices and that employees are well-equipped to uphold halal standards, ultimately contributing to the growth and credibility of the halal poultry industry.

4.9.3.4 Consumer Confidence and Education

In this analysis, the researcher examined the perspectives of informants (P4 to P8) on two key subthemes: consumer outreach and public disclosure. These subthemes are critical for fostering consumer confidence and educating the public about the halal poultry supply chain in Malaysia.

Table 4.15 Themes and Sub-themes of Consumer Confidence and Education

Themes: Consumer Confidence and Education	Sub-themes	
	Consumer Outreach	Public Disclosure
P4	✓	✓
P5	✓	✓
P6		✓
P7		
P8	✓	✓
Total %	60	80

Consumer Outreach

Consumer outreach involves efforts to raise awareness and educate the public about halal standards and practices. Effective outreach helps ensure that consumers understand the importance of halal certification and trust the products they purchase.

***P4:** “Awareness we give to the community is a lot and the level of awareness of Malaysians is quite high. But not all of them take it seriously. Certain people still have a very low level of awareness like still doubt if the products*

are halal even though the halal logo is printed and labelled there” 4:69 ¶ 1001 – 1013 in P4.

P5: *“To provide awareness to the community through the mass media, the halal awareness campaign that we see is being actively carried out by the government and the private sector. It is very important to help the integrity of halal supply chain in this industry” 5:26 ¶ 206 in P5.*

P8: *“There is a growing concern about sustainability and ethical aspects in chicken production, which is driving the industry to adopt socially and environmentally responsible practices. This is what drives the industry to be more responsible and protect the industry. I am also responsible for giving awareness to my family and my community through verbal and social media platforms” 8:26 p 3 in P8.*

60% of the informants agreed that consumer outreach could enhance the integrity of the halal poultry chain industry in Malaysia. P4 emphasizes the varying levels of awareness among Malaysians. While some have a high level of awareness, others remain sceptical about the halal status of products, even when labelled as such. P5 highlights the role of mass media in raising halal awareness through government and private sector campaigns. These efforts are crucial for maintaining the integrity of the halal supply chain. P8 notes the increasing concern among consumers about the sustainability and ethical aspects of chicken production. This concern drives the industry to adopt socially and environmentally responsible practices.

The informants recognize the importance of consumer outreach in building trust and ensuring that consumers are well-informed about halal standards. P4 and P5 emphasize the need for continuous awareness campaigns through various media channels. P8 adds that growing concerns about sustainability and ethics are driving the industry to improve practices, further enhancing consumer confidence.

Public Disclosure

80% of the informants agreed that public disclosure could enhance the integrity of the halal poultry chain industry in Malaysia. Halal-certified poultry producers in Malaysia publicly disclose their certification status through labelling and marketing materials. Packaging prominently displays halal certification logos issued by recognized authorities such as JAKIM or state-level JAIN, providing visible assurance of compliance with halal standards. Transparent communication builds consumer confidence and loyalty, reinforcing Malaysia's reputation as a trusted source of halal poultry products both domestically and internationally.

P4: “Consumer has their perception. We need to deal with that. Like now, consumers only support companies that do not have any association with Israel. That will have a big impact on the company. That is why, public disclosure is very important, especially in protecting the sensitivity of the Muslim consumers” 4:67 ¶ 637 – 647 in P4.

P5: “We see only every end, not the whole process. The poultry industry is critical, dealing with dirt, blood and all. The consumers cannot see all of that. That is why labelling, and packaging are crucial in giving the information to the consumer but yet again, we cannot tell the stories behind it” 5:27 ¶ 86 – 90 in P5.

P6: “I mean, to see an animal die is not pleasant, so the halal slaughter strives for perfection, but still not a pleasant sight. The brand owner will never give full transparency to their supply chain. They will never do that for a lot of reasons, right? Also, secrecy, the slaughtering of an animal is not nice to see. So they will never disclose that kind of picture. Even if you do it perfectly, it's the end of the life of an animal. So, you will never get full transparency up to the photo level. It came from that animal that you saw the last meal he was served and then he's brought to the slaughter. Right, so that's why I noticed that full traceability. I mean, with IT it is possible, but I think, first of all, brand owners, will never give that full transparency because of the sensitivity of it” 6:42 ¶ 32 in P6.

P8: “For slaughterhouses with halal certificates, there are fewer issues because it involves strict control by JAKIM. The issue is that slaughterhouses and slaughterhouses do not have halal certificates, so it is uncertain whether to follow the Shariah requirements and halal certification. So he was doubtful about the status of the slaughter” 8:30 p 5 in P8.

P4 discusses the impact of consumer perceptions and the importance of public disclosure in maintaining trust, especially regarding sensitive issues such as associations with certain countries. P5 points out the limitations of public disclosure, noting that consumers only see the end product and not the entire process, which involves less appealing aspects like handling dirt and blood. P6 highlights the sensitivity around full transparency in the supply chain, particularly concerning the unpleasant aspects of animal slaughter. They note that brand owners are unlikely to provide full transparency for various reasons, including consumer sensitivity. P8 highlights the importance of strict control by JAKIM for slaughterhouses with halal certificates, pointing out that the main issue arises with uncertified slaughterhouses, which casts doubt on their compliance with halal standards.

The informants agree on the importance of public disclosure in building consumer confidence. P4 and P5 emphasize the need for transparency through labeling and marketing, while also acknowledging the limitations and sensitivities involved. P6 points out the challenges of providing full transparency, especially concerning the less appealing aspects of the supply chain. P8 stresses the importance of strict control and certification to ensure compliance with halal standards.

The thematic analysis reveals a strong consensus among informants on the necessity of consumer confidence and education through consumer outreach and public disclosure. The informants emphasize the importance of continuous and comprehensive awareness campaigns to educate consumers about halal standards. P4 and P5 highlight the role of mass media and government campaigns, while P8 underscores the impact of growing concerns about sustainability and ethics on industry practices. Informants agree that transparent communication through labelling and marketing is crucial for building consumer trust. They acknowledge the limitations and sensitivities involved in

providing full transparency but stress the importance of strict control and certification to ensure compliance with halal standards.

Overall, enhancing consumer confidence and education through effective outreach and transparent public disclosure are critical steps towards maintaining the integrity of the halal poultry supply chain in Malaysia. These measures will help build trust, ensure compliance with halal standards, and uphold Malaysia's reputation as a leader in halal food production.

4.9.4 Conclusions

The comprehensive analysis of these four themes underscores the multifaceted efforts required to ensure the integrity of the halal poultry supply chain in Malaysia. The integration of advanced technologies like block chain, rigorous supplier verification, effective industry collaboration, continuous training, and transparent consumer communication are all critical components. These measures will help build consumer trust, ensure compliance with halal standards, and uphold Malaysia's reputation as a leader in halal food production.

4.10 RO 4: CONCEPTUAL FRAMEWORK FOR PRACTICING INTEGRITY IN THE HALAL SUPPLY CHAIN INDUSTRY IN THE CONTEXT OF THE HALAL POULTRY INDUSTRY IN MALAYSIA BASED ON *MAQĀṢID AL-SHARĪ'AH*

As noted in RO 1 and RO 2, this study aimed to explore the concept and the practice of the halal poultry industries in Malaysia halal supply chain integrity in the context of halal poultry industries in Malaysia and RO 3, was to determine the opportunities in enhancing the halal supply chain integrity in the context of the halal poultry industry in Malaysia. A series of semi-structured interviews were conducted with the halal

executives of the three poultry industries in three different Malaysian states which are Kedah, Perak and Melaka and five experts in the halal industry to develop further understanding and contextualize their integrity practice in the halal poultry industries in Malaysia halal supply chain integrity in the context of halal poultry industries in Malaysia for RO 4.

It was expected that the interviews would help the researcher to develop a further understanding of how the application of the halal supply chain integrity is being practiced and how they respond to it in the poultry industries in this country. The informants were symbolised as P1, P2, P3, P4, P5, P6, P7 and P8.

As noted in this section, this point was particularly fascinating, although no literature could be found in the Malaysian context that addresses this point in four different dimensions such as pure, hygiene, quality and safe with the *maqāsid al-Sharī'ah* Furthermore, the interviews also provided more insights into the halal control points, halal integrity issues, and lack of enforcement as these are further discussed below. Above all, the interviews additional information that would extend the expectations toward the halal poultry industries in Malaysia.

4.10.1 Profile of Informants

Table 4.16 Profile of the Informants for RO 4

Serial Number	Company Name	Education Background	Position	Working Experience in the field
P1	Company A	Bachelor (Shariah)	Halal Executive	9 years
P2	Company B	Bachelor (Halal Industry)	Halal Executive	4 years
P3	Company C	Bachelor (Syariah)	Halal Executive	8 years
P4	HDC	Bachelor Degree	Halal Consultant and Advisor	11 years

P5	IMP	Bachelor Degree	Head of Compliance of Shariah Department	18 years
P6	LLB	PhD	CEO of LLB and Adjunct Professor	26 years
P7	JHEAIK	Bachelor Degree	Enforcer	6 years
P8	UNITI	Master Degree	Halal Trainer	16 years

4.10.2 RO 4 Findings

The *maqāṣid al-Sharī'ah* (objectives of Islamic Law) emphasize the protection of five essential elements which are the protection of religion (*deen*), life (*nafs*), intellect (*aql*), Lineage (*nasl*) and wealth (*mal*). Integrating these into the halal poultry supply chain ensures that all practices comply with Islamic principles while promoting overall well-being. Here is how the five protections can be incorporated.

4.10.2.1 Protection of Religion

One of the main goals of *maqāṣid al-Sharī'ah*, the purposes of Islamic law, is the preservation of religion, or *Hifz al-Din*. It highlights the significance of upholding the values and customs that support Muslims' faith. Within the halal poultry supply chain, this entails making certain that every phase, ranging from procurement to slaughtering, adheres to Islamic dietary regulations. All informants agreed that the protection of religion (halal integrity and religious obligation) holds a significant relevance to the halal poultry industry as shown in Table 4.17.

Table 4.17 Theme and Subtheme of Protection of Religion

Protection of Religion	P1	P2	P3	P4	P5	P6	P7	P8	Total
Halal Integrity and Religious Obligation	✓	✓	✓	✓	✓	✓	✓	✓	100%

Halal Integrity and Religious Obligation

P1: “I think for the protection of religion, this can be seen in the whole practice itself, why we guard the integrity of our practice. this is because what Allah asks us to do to eat what is halal. we need to make sure the pre-slaughtered, process and after the process is right” 1:103 ¶ 121 in P1.

P2: “I believe that the reason we maintain the purity of our practice is to defend religion, which is evident in the entire process. this is a result of what Allah has commanded us to do—eat only halal food. We must ensure that the process is correct” 2:147 ¶ 148 in P2.

P3: “I think that the integrity of our practice is protected for the sake of religious freedom, and this is evident throughout the entire process. This is due to what Allah commands us to do, which is to consume halal food” 3:105 ¶ 147 in P3.

P4: “When we talk about halal poultry, we must choose halal slaughtered only. This is related to preserving our religion. That is why I think this topic is so close to the community. We must ensure what we eat is halal” 4:46 ¶ 1131 – 1143 in P4.

P5: “Protection of religion: what is stated in al-Quran to eat what is halal and tayyib. All the Muslims must follow. Now it is easy to find halal food everywhere and we have the guidelines” 5:29 ¶ 207 in P5.

P6: *“For religious protection, of course, halal is the main idea. To protect the religion itself. The holy Quran says, to eat halal and tayyiban. In the holy Quran, halal is never put in isolation. It's always halal and tayyiban. So, it's important to have both put in place. Halal and tayyiban” 6:30 ¶ 50 in P6.*

P7: *“In halal poultry, we should set our mind and intention to protect all in maqāṣid al-Sharī'ah. In the protection of our religion, it is what Allah told us to do. If we prepare food, we should make sure we prepare it in the right way as if we prepare for our family to eat” 7:17 ¶ 17 in P7.*

P8: *“In religious protection, an example of what we consume is, we must eat what is halal and permitted in Islam. The demand to find halal food is a demand based on the verses of the Quran. Among them surah al-Baqarah 2:168 and Surah Al-Ma'idah 5:3 Through compliance with halal standards, the chicken industry will follow the requirements of shariah and directly enable Muslims to consume halal and tayyib food” 8:6 p 6 in P8.*

Informants P1, P2, and P3 stress the need for a comprehensive approach that ensures the entire process from pre-slaughter to consumption aligns with Islamic principles. This holistic view is essential for maintaining the integrity of halal practices. P4 and P7 emphasize the communal obligation to ensure food is halal. They argue that preserving religious practices is not just an individual responsibility but a collective duty involving the entire community. P5, P6, and P8 reference specific Quranic injunctions that mandate the consumption of halal and *tayyib* food. These divine commands form the foundation of halal practices and must be adhered to throughout the supply chain. P6 introduces the concept of *tayyib* alongside halal, emphasizing that both aspects are crucial for protecting religious values. This combination ensures that food is not only religiously compliant but also wholesome and pure.

The informants' perspectives collectively underscore the critical role of halal practices in protecting religious values. They highlight the need for a holistic approach, communal responsibility, adherence to Quranic guidance, ease of compliance, and the combination of halal and *tayyib* principles. These insights reinforce the importance of

integrating *maqāṣid al-Sharī'ah* into the halal poultry supply chain to maintain religious integrity and promote overall well-being.

4.10.2.2 Protection of Life

The survival of humanity is deeply connected to the principle of *Hifz al-Nafs* (protection of life) in *maqāṣid al-Sharī'ah*. In the context of the halal poultry supply chain, consuming halal and *tayyib* chicken is essential for sustaining human life and preventing malnutrition or food-related diseases. Nutritious and ethically sourced poultry provides the necessary sustenance for survival, ensuring that individuals receive the vital nutrients needed to maintain health and avoid starvation. By adhering to halal integrity from farm to slaughter, the industry upholds its responsibility to provide safe and wholesome food, directly contributing to the survival of humanity. All informants agreed that the survival of humanity holds significant relevance in the protection of life to the halal poultry industry, as demonstrated in Table 4.18 below.

Table 4.18 Theme and Subtheme of Protection of Life

Protection of Life	P1	P2	P3	P4	P5	P6	P7	P8	Total
Survival of humanity	✓	✓	✓	✓	✓	✓	✓	✓	100%

Survival of humanity

This subtheme reflects the religious obligation to keep eat which is essential for sustaining human life and preventing hunger and malnutrition.

P1: *“We eat to survive, simple as that. If we don’t eat, we die. But in Islam, it’s not just about eating anything—we need to make sure it’s halal and safe. That’s why the halal industry exists, to protect us from harmful stuff in food. It’s all about keeping things clean, ethical, and safe, which fits perfectly with Maqasid Shariah’s goal of protecting human life” 1:104 ¶ 123 in P1.*

P2: *“Food is life, literally. But Islam doesn’t just let us eat whatever we want—there are rules to make sure what we consume is good for us. If we eat harmful things, we get sick, and in extreme cases, it can be life-threatening. The halal industry steps in to make sure our food is not only halal but also healthy, safe, and beneficial. That’s how it ties back to Maqasid Shariah, which is all about preserving life” 2:153 ¶ 151 in P2.*

P3: *“We don’t just eat to fill our stomachs; we eat to stay alive and healthy. That’s why Islam is very particular about what goes into our bodies. If the food isn’t halal or safe, it can cause health problems. The halal industry makes sure we get food that’s clean and free from harmful substances, which aligns with the whole idea of protecting life in Maqasid Shariah” 3:112 ¶ 149 in P3.*

P4: *“Think about it—if food is contaminated or unsafe, people can get seriously sick, right? Islam already thought ahead and set rules to make sure what we eat is good for us. The halal industry is there to enforce these rules, ensuring that what we consume doesn’t harm us. At the end of the day, it’s all about keeping people healthy and alive, which is exactly what Maqasid Shariah promotes” 4:72 ¶ 1612 in P4.*

P5: *“Islam wants to protect us from that, which is why halal standards exist. The halal industry ensures we’re not just eating anything, but something that’s actually good for us. That’s why it’s a key part of preserving life” 5:30 ¶ 202 in P5.*

P6: *“Eating is a basic need, but Islam reminds us to eat responsibly. It’s not just about filling your stomach; it’s about making sure what you eat is safe and beneficial. If food isn’t clean or halal, it can be dangerous. That’s why the halal industry is important—it ensures that what we put in our bodies won’t harm us, which goes hand in hand with Maqasid Shariah’s focus on protecting life”* 6:44 ¶ 70 in P6.

P7: *“Why do we eat? To stay alive, obviously. But Islam takes it further by making sure we eat things that are not just halal, but also good for us. If the food isn’t safe, it can hurt us. That’s where the halal industry comes in, making sure what we consume won’t harm our health. It’s all about keeping people safe, which is exactly what Maqasid Shariah is about”* 7:28 ¶ 17 in P7.

P8: *“Food keeps us going, but Islam teaches us to eat with care. If we just eat anything, we might end up consuming something harmful. The halal industry makes sure that doesn’t happen. It’s not just about religious compliance; it’s about public health and safety too. That’s why halal regulations exist—to protect us and, ultimately, to preserve human life”* 8:29 ¶ 18 in P8.

Human life fundamentally depends on the consumption of food, making access to safe and nutritious food a basic necessity. As highlighted by the informants, food is not only required for survival but also for maintaining health and well-being. P1 stated, "We eat to survive, simple as that. If we don’t eat, we die." This sentiment reflects the essential nature of food in sustaining life. However, Islam does not permit indiscriminate consumption. Instead, it regulates food intake through the principles of halal and *tayyib* (pure and wholesome), ensuring that what is consumed contributes positively to human health.

The protection of human life (*Hifz al-Nafs*) is one of the five primary objectives of *maqāṣid al-Sharī’ah*. The Halal industry aligns with this objective by establishing rigorous standards that prevent harm and promote well-being. According to P3, "Islam is very particular about what goes into our bodies. If the food isn’t halal or safe, it can

cause health problems." This perspective highlights that halal regulations serve as a preventive measure against health risks, ensuring that food products are not only lawful but also beneficial. Moreover, the prohibition of harmful substances such as pork, alcohol, and contaminants reflect the Islamic commitment to protecting human life. P2 emphasized that "Halal is not just about food compliance; it ensures the well-being of consumers." This reinforces the idea that Halal standards are designed to prevent harm before it occurs, aligning with the principle of *Sadd al-Dhara'i* (blocking the means to harm).

The halal industry acts as a regulatory mechanism that upholds food safety and quality throughout the supply chain. P6 noted, "The halal industry ensures that what we put in our bodies won't harm us." This role is particularly crucial in preventing foodborne illnesses, contamination, and the use of harmful ingredients. The industry's stringent guidelines on sourcing, processing, and certification help maintain high standards of hygiene and safety, thereby protecting consumers from potential health hazards. Additionally, the emphasis on cleanliness and ethical practices within the Halal supply chain promotes public health. P4 stated, "Halal integrity extends to ethical sourcing, cleanliness, and safety, which align with the Islamic principle of life preservation." This holistic approach reflects the broader vision of *maqāṣid al-Sharī'ah*, where the protection of human life is not limited to the end product but extends to the entire production process.

One of the key insights from the interviews is that halal regulations act as a preventive measure to protect human life. P5 explained, "If a product is not safe, it cannot be considered halal." This highlights the preventive nature of halal certification, which aims to eliminate potential health risks before products reach consumers. The Halal industry's proactive approach aligns with the Islamic principle of *Dar' al-Mafasid* (avoiding harm), further reinforcing its role in safeguarding human life. Furthermore, the Halal industry's emphasis on food safety and hygiene contributes to broader public health outcomes. By enforcing stringent quality controls, the industry not only serves the Muslim community but also benefits society at large. P8 remarked, "Halal is not only an Islamic obligation but also a public health necessity." This observation underscores the universal benefits of halal regulations, positioning the halal industry as a key player in promoting public health.

The findings from this analysis demonstrate that the halal industry plays a vital role in protecting human life, a fundamental objective of *maqāṣid al-Sharī'ah*, by ensuring that food products meet high standards of safety, hygiene, and ethical integrity, the halal industry aligns with the Islamic principles of *Hifz al-Nafs* and *Sadd al-Dhara'i*. The industry's preventive measures not only safeguard the health of Muslim consumers but also contribute to broader public health outcomes. Therefore, the Halal industry serves as both a religious obligation and a public health mechanism, reinforcing the holistic vision of Islam in preserving human life.

4.10.2.3 Protection of Intellect

The preservation of intellect, or *Hifz al-'Aql*, is a fundamental objective of *maqāṣid al-Sharī'ah*, emphasizing the importance of knowledge, education, and informed decision-making. In the context of the halal poultry supply chain, this principle involves educating employees and consumers about halal practices, ensuring transparency, and promoting ethical business operations. all the informants' viewpoints were divided into two subthemes which are personal conduct and continuous training. Hence, only three informants (P2, P3 and P4) agreed that the protection of intellect (of personal conduct) has a significant relevance with the halal poultry industry while informants P1, P5, P6 and P8 agreed that the protection of religion (of continuous training) has a significant relevance in the halal poultry industry.

Table 4.19 Theme and Subtheme of Protection of Intellect

Protection of Intellect	P1	P2	P3	P4	P5	P6	P7	P8	Total
Personal Conduct		✓	✓	✓					37.5%
Continuous Training	✓				✓		✓	✓	50%

Personal Conduct

P2: “I always see the connection of mind and our lifestyle. What we consume shapes our thinking and behaviour. That is why we cannot do drugs and drink alcohol. See I always make sure when we hire employees, they are free from these issues. This is how I see *maqāṣid al-Sharī'ah* helps in protecting the minds of people”. 2:149 ¶ 150 in P2.

P3: “The thing that we dealt with in the industry is that we have non-Muslim workers. One time, they bring alcohol that is put in a tumbler. They trying to disguise it. So we collaborate with HR and security. So, any food and drinks that you want to bring in will be checked first at the front. This is an example of the protection of the mind. We cannot consume any alcohol and in halal poultry, we cannot allow it even if it is from the non-Muslim top management” 3:110 ¶ 138 in P3.

P4: “I think mostly in the poultry industry, we cannot see much of the connection between the protection of mind and halal poultry. But what I can see is the state of mind of the employees. We need employees who are sound in mind that could slaughter the chicken right? And of course, the lifestyle he cannot consume alcohol or take drugs” 4:49 ¶ 1192 – 1215 in P4.

P2 links personal lifestyle choices (avoiding drugs, and alcohol) to protecting the mind and behaviour. P2 views adherence to *maqāṣid al-Sharī'ah* as essential for maintaining halal standards and employee integrity. P3 Regulatory highlights the

importance of strict controls over substances (like alcohol) entering the workplace. P3 also advocates collaboration between HR, security, and management to enforce halal integrity policies. P4 focuses on the mental state of employees and their ability to adhere to halal standards which emphasizes hiring employees with ethical integrity and sound minds for performing halal practices.

Across all informants, there is a consistent integration of *maqāṣid al-Sharī'ah* principles in protecting intellect within the halal poultry industry. Several informants (P2, P3 and P4) emphasize personal conduct aligned with *maqāṣid al-Sharī'ah*, such as abstaining from substances and maintaining ethical integrity. This aligns with *maqāṣid*'s objective to preserve the mind's clarity and ethical behaviour. P3 stresses the importance of regulatory compliance and control over substances to uphold halal integrity. This reflects *maqāṣid al-Sharī'ah* objective of preserving the mind and preventing harm through adherence to ethical and legal standards.

Continuous Training

P1: *“For the protection of intellect, we as the producers, must be transparent about what we produce. The packaging, label, and logo must be printed correctly. That is for us to consumers. For our workers also we need to provide enough training. Not everyone in our company is aware of the halal issue and that is very important. 1:100 ¶ 124 – 125 in P1.*

P5: *“Foreign workers also need to have proper halal training and awareness. Because different countries might interpret different understandings of halal and integrity in the workplace. Because of different cultures. The different intentions might only be because of business and profit alone. Whistleblowing culture at the workplace. Not many workers are brave enough to step out to tell what went wrong with the regulatory bodies, so we need some tools and a body that could protect them and stay anonymous. The conveyor problems that move too fast. 5:23 ¶ 203 – 205 in P5.*

P7: *“See how the halal industry protects the intellect is for us what I see the most by all the training, research, audits and lectures that we need to do as*

the regulatory body in Malaysia. We need to make sure that we are competent enough to always update with the halal matter. This also includes the industry as well. They need to undergo training and so on” 7:16 ¶ 5 in P7.

***P8:** “For me, it is necessary to ensure that workers are given continuous training and awareness about the halal industry and other sciences. Designing systematic training can help workers to maintain their minds, especially when dealing with work pressure” 8:8 p 6 in P8.*

P1 emphasizes transparency in production processes and accurate labelling for consumer trust which advocates for comprehensive training on halal issues to ensure adherence and integrity in operations. P5 addresses cultural differences in interpreting halal practices among foreign workers which also supports a whistleblowing culture to address integrity issues effectively and anonymously. P7 mentioned the role of continuous education and competence development in upholding halal standards and P7 also advised comprehensive training to ensure regulatory and ethical compliance across the industry. Meanwhile, P8 stresses the systematic training to maintain mental clarity and ethical conduct under work pressure. P8 also supports integrating ethical education with halal training to enhance employee performance and adherence.

Perspectives from informants P1, P5, P7, and P8 highlight the role of education and continuous training in ensuring competence and ethical conduct. This supports *maqāsid al-Sharī'ah* goal of promoting knowledge (*ilm*) and protecting the intellect through informed decision-making and ethical behaviour.

4.10.2.4 Protection of Lineage

The concept of protecting lineage (*hifz al-nasl*) within *maqāsid al-Sharī'ah*, Islamic jurisprudence's objectives, holds significant relevance to the halal poultry supply chain industry. All informants agreed that the protection of lineage (consumption of *halalan*

tayiban food) holds a significant relevance to the halal poultry industry as shown in Table 4.20 below.

Table 4.20 Theme and Subtheme of Protection of Lineage

Protection Of Lineage	P1	P2	P3	P4	P5	P6	P7	P8	Total
Consumption of Halalan Tayiban Food	✓	✓	✓	✓	✓	✓	✓	✓	100%

Consumption of Halalan Tayiban Food

P1: “For the protection of lineage, we want our generation to eat halal food, with the right nutrition. For poultry industries, it is important to provide the best and quality food for our consumers” 1:101 ¶ 127 in P1.

P2: “Because we are what we eat. If we eat unhealthy food, it will damage our body, mind and soul. So, by consuming halal tayiban food, it gives huge benefits to our body and future generations as well” 2:152 ¶ 152 in P2.

P3: “In the poultry industry, we need to make sure the poultry and our final products are safe for consumption. All these implementations that we did are to ensure the safety of our products because, in Islam, we need to only consume what is good for us” 3:108 ¶ 153 in P3.

P4: “Protection of lineage of course when we talk about consuming good halal food, it will affect the way we behave, the way we think and also affect our genes. That influence a lot as well” 4:50 ¶ 1216 – 1223 in P4.

P5: “We can see a lot of practices in the protection of lineage. Practice like good hygiene, and food safety is to make sure we consume halal and tayiban food” 5:20 ¶ 137 – 140 in P5.

P6: *“It's always halal and tayiban. So, it's important to have both put in place. Halal and tayiban. Good safety, and a cool chain. We've talked about poultry. A cool chain is extremely important. Cool chain and hygiene. Because there are different bacteria in chicken. That can cause sickness or even worse. E. coli and also salmonella. So, halal and tayiban are extremely important. That addresses also the issue of lineage” 6:31 ¶ 50 in P6.*

P7: *“When we want to produce something or to sell something, we need to make sure as if it is for our family to consume. Hence, we will do it thoroughly and full of sincerity. Because we only want to serve good quality food for our family to consume for their health and goodness” 7:18 ¶ 17 in P7.*

P8: *“Providing halal, clean and nutritious food can help Muslims in caring for their offspring. This involves the selection of halal and clean sources of chickens from a genetic perspective, ensuring good and healthy offspring” 8:9 p 6 in P8.*

The data reveal a unanimous agreement among informants (P1–P8) on the critical role of consuming halal and *tayiban* food in the protection of lineage. All informants emphasize the significance of food quality, hygiene, and ethical considerations in ensuring both immediate and long-term benefits to consumers and future generations.

Informants P1, P3, and P5 focus on the industry's responsibility to ensure that poultry products are of high quality and safe for consumption. This includes implementing stringent hygiene and food safety practices to protect consumers. Ensuring that food is halal and *tayiban* aligns with the Islamic principle of consuming what is pure and beneficial. Informants P2, P4, and P8 discuss the broader implications of consuming halal and *tayiban* food on health, behaviour, and genetic integrity. They highlight that consuming pure and healthy food influences one's physical and mental health, which in turn affects the health and behaviour of future generations.

P7 emphasizes the ethical dimension of producing food with sincerity and care. Treating food production with the same seriousness as if preparing it for one's family ensures high standards and aligns with the *maqāṣid al-Sharī'ah* principle of protecting lineage through ethical conduct. Informant P6 stresses the need for a comprehensive approach to maintaining halal and *tayiban* standards, including the importance of a cool chain and hygiene to prevent contamination. This holistic approach ensures that food remains safe and pure from production to consumption.

Implementing stringent quality control and safety measures in the production process is crucial to ensure that food is both halal and *tayiban*. This protects the health of consumers and their future generations. Consuming halal and *tayiban* food have far-reaching effects on physical and mental health, influencing behaviour and genetic integrity. This aligns with the principle of protecting lineage by ensuring that future generations are healthy and well-nurtured. By adhering to the halal standard, the halal poultry industry can effectively protect lineage, as outlined in *maqāṣid al-Sharī'ah*, ensuring that the food consumed by Muslims is pure, beneficial, and conducive to the well-being of current and future generations.

4.10.2.5 Protection of Wealth

In the context of the halal poultry industry, the protection of wealth (*Hifz al-Mal*) as part of *maqāṣid al-Sharī'ah* can be demonstrated through several activities that ensure economic sustainability, ethical business practices, and fair trade. The subthemes were divided into two which are halal socio-economy and halal value chain. The majority of the informants (75%) agreed that the protection of wealth (halal socio-economy) has a significant relevance in the halal poultry industry while 25% of the informants (P6 and P8) agree that protection of life (halal value chain) has a significant relevance in the halal poultry industry.

Table 4.21 Theme and Subtheme of Protection of Wealth

Protection of Wealth	P1	P2	P3	P4	P5	P6	P7	P8	Total
Halal Socio-economy	✓	✓	✓	✓	✓		✓	✓	75%
Halal Value Chain						✓		✓	25%

Halal-Socio Economy

The halal socio-economy focuses on creating economic opportunities and ensuring ethical business practices within the halal poultry industry. This includes providing jobs for the Muslim community, utilizing by-products to minimize waste, and contributing to the overall economy through halal practices.

P1: *“For the protection of wealth, of course, this can be a good opportunity to our ummah, can provide more job opportunities and of course, we need only Muslim to be on the production that is the requirements” 1:102 ¶ 129 in P1.*

P2: *“We utilize by-products of the poultry industry, like blood for other purposes for fertilizer to minimize waste. Usually, the object that people highlight is like blood in people looking dirty, and blood comes out in the barrel. Because we will put the blood in one basket because there are customers who take blood as well. Some customers take chicken blood. We don't sell” 2:61 ¶ 75 in P2.*

P3: *“Naturally, this can be a fantastic opportunity for people in terms of protection of the wealth and create additional work opportunities” 3:109 ¶ 155 in P3.*

P4: *“Halal is one of the reasons to generate the economy and will contribute to our GDP. Whatever we do, will generate the economy of the people and also in the halal industry. This Master Plan has seven strategic trusts. The most important strategic trust actually, to produce more*

participation of Bumiputra Industrial players in the halal industry” 4:53 ¶ 1265 – 1279 in P4.

P5: “What I see in the poultry industry’s perspective, it creates more opportunities in halal business to the Muslims locally hoping to have more involvement of local Muslims in the future as well as most of the chicken suppliers are coming from Thailand” 5:17 ¶ 99 – 100 in P5.

P7: “In my service as the regulatory bodies, I found a lot of successful young Muslim entrepreneurs in poultry industries which they managed to also build opportunities among the locals in the area. I found this very inspiring and proud too” 7:19 ¶ 11 in P7.

P1 highlights the economic benefits for the Muslim community, emphasizing job creation specifically for Muslims in the production process. This ensures compliance with halal requirements and supports the socio-economic development of the ummah. P2 discusses the efficient use of by-products such as chicken blood for fertilizer, which minimizes waste and creates additional economic value. P3 reinforces the notion that the halal industry provides job opportunities for the people, aiding socio-economic development. P4 connects the halal industry to broader economic growth, stating that halal practices contribute to GDP and support the participation of Bumiputra industrial players. P5 highlights the potential for local Muslim involvement in the poultry industry, which is currently dominated by suppliers from Thailand. P7 shares a personal observation of successful young Muslim entrepreneurs in the halal poultry industry, noting their contribution to local economic development.

Halal Value Chain

The halal value chain highlights how crucial it is to preserve halal integrity through the supply chain. This entails applying Islamic banking concepts, making sure that every transaction complies with halal laws, and putting in place the necessary procedures to uphold halal standards throughout the whole supply chain, from manufacturing to consumer purchase.

P6: *“Halal supply chain is addressing halal end-to-end. Halal value chain is also looking at Islamic finance. Takaful. HR. Looking at sustainability. Looking at halal branding, halal marketing. This creates a more halal businesses and transactions in the future” 6:43 ¶ 36 in P6.*

P8: *“In my opinion, safeguarding property involves the maintenance that every transaction and activity in the halal poultry chain is legal and does not involve elements of malpractice or infidelity. Careful management of the supply chain also helps to protect the property and interests of all parties involved” 8:9 p 6 in P8.*

P6 describes the halal value chain as encompassing all aspects of halal business, including finance (Takaful), human resources, sustainability, branding, and marketing. This comprehensive approach ensures that every transaction and process adhere to halal principles. Meanwhile P8 focuses on the importance of legal and ethical practices within the halal poultry chain to protect the property and interests of all parties involved. This includes careful management and adherence.

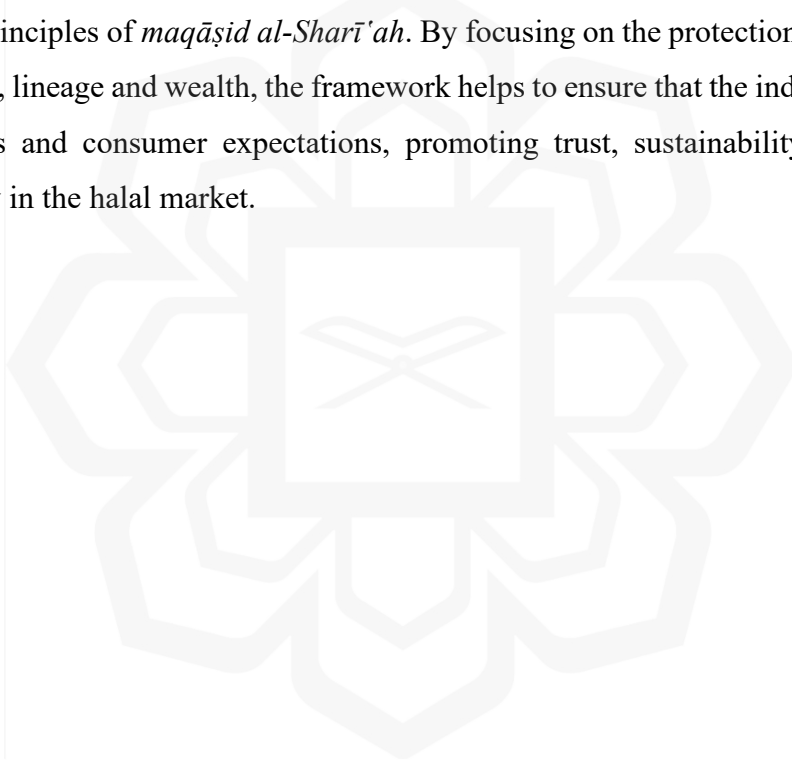
The protection of wealth in the halal poultry industry is multi-faceted, encompassing both the halal socio-economy and the halal value chain. In halal socio-economy, the focus here is on creating economic opportunities, particularly for the Muslim community. Informants emphasize job creation, efficient use of resources, and overall contributions to the economy. This sub-theme supports the socio-economic development of the ummah by ensuring that economic activities within the halal poultry industry are ethical and beneficial to the community.

In the halal value chain, this subtheme addresses the need for comprehensive halal compliance throughout the supply chain. Informants highlight the importance of integrating Islamic finance, maintaining ethical practices, and ensuring transparency and traceability. The halal value chain ensures that all processes, from production to consumer purchase, adhere to halal principles, protecting the economic interests of all stakeholders.

Together, these subthemes illustrate a holistic approach to the protection of wealth in the halal poultry industry, ensuring that economic activities are not only profitable but also aligned with Islamic values and beneficial to the community.

4.10.3 Conclusion

The conceptual framework that has been proposed above provides a comprehensive approach to ensure the integrity of the halal poultry supply chain in Malaysia, grounded in the principles of *maqāṣid al-Sharī'ah*. By focusing on the protection of religion, life, intellect, lineage and wealth, the framework helps to ensure that the industry meets both religious and consumer expectations, promoting trust, sustainability and economic viability in the halal market.



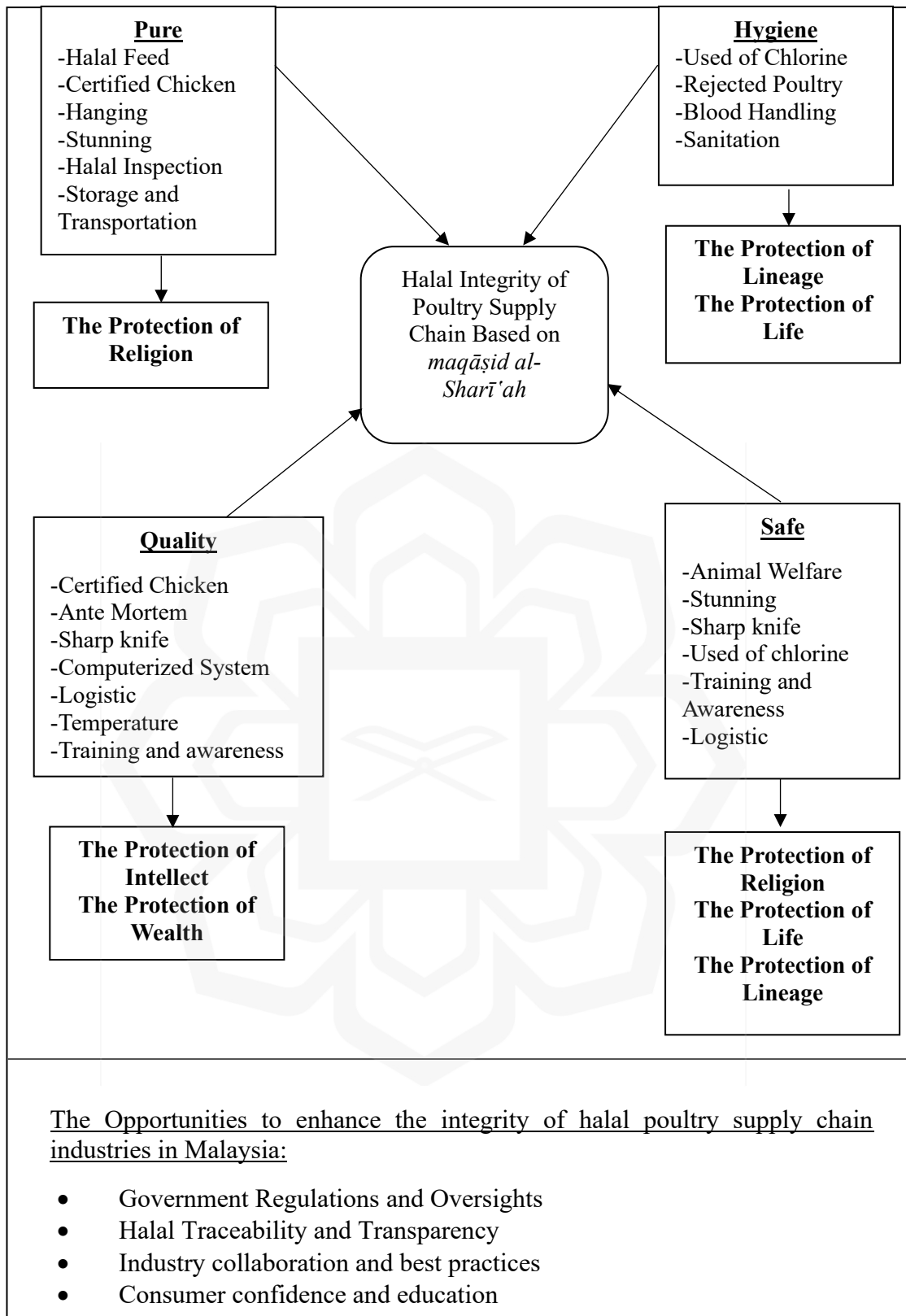


Figure 4.12 Conceptual Framework of Halal Integrity Poultry Supply Chain based on *maqāṣid al-Sharī'ah*

Figure 4.12 shows the conceptual framework of the halal integrity poultry supply chain based on *maqāṣid al-Sharī'ah*. The conceptual framework for the halal poultry supply chain, as illustrated by Figure 4.12, incorporates the principles of *maqāṣid al-Sharī'ah* to protect the wholeness and integrity of halal poultry. *Maqāṣid al-Sharī'ah* sets the higher objectives or goals of Islamic law, which provide that all the acts performed by the community should be based on Islamic principles for its protection of welfare. Five things are to be preserved: religion, life, intellect, lineage, and wealth. Every single aspect of the supply chain is designed in such a way that these objectives would constantly be upheld to ensure not just halal but also safe, pure, and high-quality poultry.

The hygiene dimension of the model involves several important considerations regarding the cleanliness and safety of the poultry. This emphasizes the use of chlorine, handling rejected poultry, blood management, and sanitation. These practices ensure that there is no contamination in the poultry, making it safe for consumption, which serves the *maqāṣid al-Sharī'ah* by protecting life. More issues on animal welfare, stunning methods, sharp knife usage, and complete training and raising of awareness to personnel enhance the safety and humane treatment of poultry. Logistical activities such as transport and storage should ensure that hygiene levels set in the production process are maintained to ensure the birds are in the best possible condition when they reach the consumer market.

Purity within the supply chain is achieved by ensuring conformance to the halal requirements for feed, certified halal chickens, proper hanging, proper stunning, and halal inspection. These practices consider the chicken as pure, free from forbidding substances, and protection of religion to protect the halal status of integrity. Certification of chicken with regular halal inspections helps assure customers about the conformance of products to Islamic dietary law, hence giving consumers confidence in the authenticity and purity of poultry products.

The quality component is central to the conceptual framework as it incorporates the certification of chickens, ante-mortem inspection, sharp knives, computerized monitoring systems, logistical considerations, temperature control, and continual training and awareness programs. Integrated with advanced technologies and strict

standards, the supply chain protects consumer intellect and wealth in the quality and reliability of what is received.

This framework also brings into the limelight the protection of lineage and life, which are inherently important goals of *maqāṣid al-Sharī'ah*. By ensuring that hygiene and quality are at the best levels possible within the supply chain, consumers' health and well-being are protected to effectively safeguard life. The focus on proper handling of blood and good treatment of animals respects the dignity of life in line with the ethical ideals prescribed by Islam.

The following are the opportunities to enhance the integrity of the halal poultry supply chain in Malaysia that have been highlighted in the conceptual framework:

1. Government regulations and oversight can be made more stringent to ensure compliance with the halal standards and build credibility for the halal poultry industry.
2. Strong traceability and transparency mechanisms may be adopted to trace back each step of the supply chain, ensuring that the entire process is in compliance with halal requirements and enhancing consumer confidence.
3. Encouraging industry collaboration and sharing best practices can set up better standards and innovation in the upkeep of halal integrity.
4. Consumer Education and Confidence can increase consumer confidence and raise demand for halal poultry products through the education of consumers regarding the supply chain of halal and the measures taken for its integrity.

Thus, a conceptual framework of the halal poultry supply chain based on *maqāṣid al-Sharī'ah* provides an integrated framework for the integrity, safety, purity, and quality of halal poultry. By being aligned with the greater goals of Islamic law, the framework meets religious requirements while realizing consumer welfare and humane treatment of animals. Opportunities for further improvement underline the continuous effort in enhancement and cooperation necessary to safeguard and raise standards of the halal poultry industry in Malaysia.

4.11 Discussion

In this section, the findings of the present study are explored through an in-depth qualitative discussion, considering the research questions, research objectives, and theoretical framework. The discussion is structured according to the research questions, allowing for a comprehensive interpretation of the data within the context of the underpinning theories. Emerging themes and patterns are analyzed to provide deeper insights into the study's key areas of inquiry.

4.11.1 Objective One:

4.11.1.1 Pure

The findings highlighted how Malaysia's halal regulation structure is all-encompassing and consistent with core Islamic values. In Islamic jurisprudence (*fiqh*), particularly in the Hanafi, Maliki, Shafi'i, and Hanbali schools of thought, the stress on purity is firmly established.

The regulatory emphasis on "pure" dimensions aligns with *maqāṣid al-Sharī'ah* (objectives of Islamic law), particularly the protection of faith (*hifz al-din*) and life (*hifz al-nafs*). Ensuring halal integrity through meticulous slaughtering, processing, and transportation safeguards Muslim consumers from consuming impure or doubtful food products (Qardhawi, 1993). The framework also resonates with Institutional Theory, as regulatory bodies enforce stringent guidelines to ensure industry compliance (Barzelay & Scott, 1997).

The focus on proper slaughtering and monitoring stunning methods addresses ongoing debates within the global halal industry regarding the permissibility of stunning. Previous studies, such as (Bonne & Verbeke, 2008b), highlight that Muslim consumers prefer non-stunned meat due to concerns over improper slaughtering practices. The Malaysian halal regulatory approach bridges this gap by permitting

stunning under strict supervision, ensuring compliance with both Islamic and scientific requirements.

Furthermore, the requirement for halal-dedicated logistics supports the Halal Supply Chain Model proposed by (Tieman, 2011b), which stresses end-to-end halal integrity. The segregation of halal and non-halal materials in storage and transportation reduces the risk of cross-contamination, aligning with supply chain integrity frameworks.

The stringent packaging and labelling requirements reinforce transparency, which is critical for consumer trust (Wilson & Liu, 2011). Misleading labels can lead to consumer doubt, affecting market confidence in halal-certified products. Ensuring accurate and Shariah-compliant labelling aligns with the Signaling Theory, where credible certifications serve as market signals to consumers about product authenticity.

Despite the comprehensive regulatory framework, implementation challenges may arise, particularly in rural or small-scale poultry operations. Ensuring compliance with halal logistics, such as dedicated vehicles and strict segregation, requires substantial financial and infrastructural investment. Future research could explore technological interventions, such as blockchain or IoT, to enhance halal traceability and compliance monitoring (Tashtemirovich & Balbaa, 2024).

The "pure" dimension in the halal poultry supply chain is meticulously regulated in Malaysia through MPPHM (Domestic) 2020 and MS1500:2019. These guidelines reflect Islamic principles, ensuring purity across all supply chain stages, from slaughtering to final product delivery. The integration of Shariah law with contemporary food safety and logistics frameworks strengthens consumer confidence and positions Malaysia as a leader in halal industry governance. Further advancements in halal technology and regulatory enforcement can enhance compliance and global competitiveness in the halal poultry sector.

4.11.1.2 Hygiene

The hygiene dimension aligns with the concept of *Tayyib* (pure and wholesome) in Islamic dietary laws, ensuring that food products meet both physical cleanliness and spiritual purity (Alserhan, 2020). The integration of hygiene regulations with halal certification underscores the holistic approach to food safety and quality in the halal industry.

From a supply chain integrity perspective, the Principal-Agent Theory (Eisenhardt, 1989) can be applied to hygiene compliance, as regulatory bodies (principals) enforce strict guidelines to ensure that food producers (agents) maintain high hygiene standards. Compliance failure not only jeopardizes halal integrity but also undermines consumer trust (Bonne & Verbeke, 2008).

The enforcement of hygiene regulations in halal poultry processing is aligned with global food safety management systems such as Hazard Analysis and Critical Control Points (HACCP) and ISO 22000. These standards emphasize risk mitigation through systematic hygiene protocols, reinforcing halal requirements (Mortimore & Wallace, 2013).

In practical applications, studies have shown that improper sanitation and hygiene management are primary causes of cross-contamination in food processing facilities (Tieman, 2011). Segregating halal premises from non-halal sources is a critical measure to prevent contamination, particularly in a multi-religious market like Malaysia (Fischer, 2016).

Consumer trust in halal products is closely tied to hygiene assurance. Research indicates that Muslim consumers perceive hygiene and halal certification as interdependent factors influencing purchasing decisions (Riaz & Chaudry, 2004). The presence of comprehensive hygiene standards in the poultry industry not only strengthens consumer confidence but also enhances Malaysia's position as a global leader in the halal market (Tieman, 2011).

Despite stringent regulations, challenges remain in ensuring consistent hygiene compliance across the supply chain. Small and medium enterprises (SMEs) often struggle with the financial and operational costs of maintaining high sanitation standards (Talib et al., 2013). Policymakers should consider incentive programs, training, and technological adoption (e.g., automation in processing and sanitation) to enhance compliance.

The hygiene dimension is a cornerstone of halal integrity, ensuring that poultry products are not only legally compliant but also meet Islamic ethical and quality standards. A well-structured hygiene framework, supported by global best practices and regulatory enforcement, will bolster halal supply chain integrity and consumer confidence. Future research could explore technological innovations in hygiene monitoring to further strengthen halal compliance mechanisms.

4.11.1.3 Safe

The findings underscore the comprehensive approach of the safe dimension in halal integrity. The intersection of Islamic law and food safety standards ensures a dual-layered framework for halal certification. This aligns with institutional theory, which posits that regulatory compliance strengthens legitimacy and consumer trust (Scott, 2008).

The safe dimension resonates with supply chain risk management theory (Tang, 2006). By incorporating safety measures, halal poultry supply chains mitigate risks associated with contamination and non-compliance, thus enhancing resilience.

From a stakeholder perspective (Freeman, 1984), ensuring safe practices benefits consumers, regulatory bodies, and businesses. Muslim consumers seek products that are both halal and *tayyib* (wholesome), emphasizing the significance of food safety in Islamic dietary laws (Bonne & Verbeke, 2008).

Implementing rigorous food safety protocols aligns with global halal industry trends, where consumers demand transparency and stringent quality control (Tieman, 2017). Businesses must invest in training, infrastructure, and certification processes to maintain compliance.

Moreover, advancements in blockchain and traceability systems can further enhance the safe dimension by providing verifiable records of halal compliance (Saber et al., 2019). Governments and certification bodies should encourage digitalization in halal supply chains to improve trust and efficiency.

The safe dimension is integral to the halal poultry supply chain, ensuring compliance with both Islamic and food safety standards. By integrating best practices from food safety management, supply chain risk mitigation, and stakeholder engagement, halal poultry businesses can enhance integrity and consumer confidence. Future research should explore technological innovations in halal traceability and their impact on safety compliance.

4.11.1.4 Quality

The quality dimension in halal poultry supply chain integrity is deeply rooted in Islamic dietary laws, food safety principles, and contemporary quality management frameworks. The integration of halal principles with quality assurance measures is essential to meet both religious and consumer-driven expectations.

The quality dimension of halal poultry supply chains can be analyzed using two primary theoretical frameworks: Total Quality Management (TQM) and Institutional Theory. The emphasis on proper documentation, employee competency, and process control aligns with TQM principles, which advocate for continuous improvement, standardization, and quality assurance in food production (Deming, 1986). The structured halal training requirements reflect TQM's focus on workforce development as a means to sustain high-quality standards (Oakland, 2021). Meanwhile, the

certification and regulatory compliance aspects align with Institutional Theory, which explains how regulatory frameworks shape industry practices. The requirements for JPV certification and adherence to MS1500:2019 standards indicate the strong role of institutional pressures in shaping halal poultry supply chain operations (Dimaggio & Powell, 1983).

The results highlight the need for players in the poultry sector to take a comprehensive approach to quality control, striking a balance between halal compliance and more general food safety regulations. According to (Tieman & Ghazali, 2013b), facility design is essential for reducing contamination risks and improving operational efficiency since it necessitates an organized premise architecture and process flow. Furthermore, frequent training courses for halal competency and awareness emphasize how crucial human resources are to preserving halal purity.

Although it is clear that halal and quality management systems are integrated, there are still a number of issues. Varying nations have varying regulations for halal certification, which makes it difficult to standardize across markets and results in inconsistent halal quality assurance (Suhaiza Hanim et al., 2010). Furthermore, despite strict rules, consumer doubt regarding halal authenticity continues, making consumer perception and trust issues a persistent challenge (Meijboom et al., 2006). Additionally, some of these issues may be resolved by implementing blockchain and IoT technologies to improve traceability and transparency in halal poultry supply chains (M. H. Ali et al., 2021).

The findings from MPPHM (Domestic) 2020 and MS1500:2019 indicate that the quality dimension in halal poultry supply chains is comprehensive, covering regulatory, operational, and training aspects. The alignment of halal requirements with TQM and Institutional Theory highlights the systematic approach required to maintain halal integrity. Moving forward, leveraging technological innovations and enhancing international standardization efforts will be crucial in further strengthening halal poultry supply chain integrity.

4.11.2 Objective Two:

4.11.2.1 Pure

The findings indicate a rigorous commitment to halal integrity in poultry supply chains across all three companies. This discussion section contextualizes these findings within relevant theories and prior literature.

In ensuring halal compliance in the ex-ante stage, the emphasis on halal feed and certified chickens aligns with the *Theory of Planned Behavior* (Ajzen, 1991), where the companies' commitment to halal sourcing stems from strong organizational intentions and regulatory expectations. The reliance on certifications such as MYGAP and DVS supports previous research (Zailani et al., 2017) that highlights the role of regulatory bodies in ensuring halal compliance.

In the in-process stage of halal assurance, the hanging process is a critical control point that aligns with the principles of Halal Critical Control Points (HCCP), a concept adapted from HACCP (Hazard Analysis and Critical Control Points) to ensure halal integrity (Bonne & Verbeke, 2008b). P3's focus on humane treatment before slaughter further aligns with Islamic principles of animal welfare, which emphasize kindness in handling livestock (al-Qaradawi, 2013). Stunning practices reflect an ongoing debate within the halal industry. While stunning is permitted under certain conditions (Riaz & Chaudry, 2004), ensuring that chickens are merely weakened rather than killed is a critical factor. The varying voltage regulations among P1, P2, and P3 indicate an attempt to balance efficiency with halal compliance. This aligns with findings by (Fuseini et al., 2017b), who argue that controlled stunning can be compatible with halal requirements if properly regulated. For inspection part, halal checkers play a fundamental role in verifying compliance with slaughtering standards, supporting previous studies on the importance of human oversight in halal processes (Tieman, 2011). The presence of multiple checkers in P3 suggests a more rigorous monitoring system compared to P1 and P2, reflecting variations in halal assurance strategies.

In the ex-post process, the use of dedicated halal storage and transportation aligns with *halal supply chain management* principles (Tieman, 2015), ensuring that halal integrity is maintained throughout the distribution process. This is particularly crucial as cross-contamination remains a major concern in halal logistics (Zulfakar et al., 2014b).

The findings suggest that while all three companies adhere to halal requirements, the degree of rigor varies. Future research could explore how automation and digital tracking technologies can enhance halal compliance further. Additionally, a comparative study of halal poultry supply chains across different countries could provide deeper insights into global best practices.

4.11.2.2 Hygiene

The use of chlorine as an antimicrobial agent aligns with global food safety practices (Jay, 2000; Mead et al., 1993). However, public perception often associates chlorine with harmful chemicals, despite its effectiveness in pathogen control (Northcutt et al., 2005). This dichotomy highlights the challenge in balancing scientific best practices with consumer acceptance. The concept of *tayyiban* in Islamic jurisprudence extends beyond halal compliance to ensuring food safety and wholesomeness (Bonne & Verbeke, 2008). Thus, while chlorine use aligns with *tayyiban* principles, companies may need better communication strategies to address public concerns.

The handling of rejected poultry varies across companies, reflecting different interpretations of halal integrity. P1's practice of repurposing rejected poultry for non-human consumption demonstrates resource efficiency but raises questions about potential cross-contamination. Conversely, P2 and P3's strict disposal methods align with halal SOPs, reinforcing compliance with *maqāṣid al-Sharī'ah* principles, particularly *hifz al-nafs* (protection of life) (Laldin & Furqani, 2013). The differences in approach may be influenced by operational priorities, risk management strategies,

and interpretations of halal ethics in supply chain management (Tieman & Ghazali, 2013).

Blood is considered *najis* (impure) in Islamic law, making its proper management crucial for maintaining halal integrity (Riaz & Chaudry, 2004). The varied approaches by P1, P2, and P3 highlight a spectrum of compliance strategies. P2's practice of collecting blood for fertilizer reflects sustainability efforts but requires stringent oversight to prevent cross-contamination. Meanwhile, P1 and P3 focus on complete blood drainage, aligning with halal slaughtering principles that emphasize full exsanguination (Tieman, 2011). These differences emphasize the necessity of standardized halal hygiene guidelines to ensure consistent compliance across poultry processing operations.

The sanitation approaches reported by P1, P2, and P3 reflect varying degrees of commitment to hygiene management. P2's emphasis on daily cleaning aligns with best practices in food hygiene (WHO, 2006), reducing the risk of microbial contamination. P3's detailed cleaning steps in high-risk areas, such as the slaughtering zone, further support compliance with halal integrity requirements. Meanwhile, P1's reliance on post-processing sanitation suggests a more reactive approach. According to HACCP (Hazard Analysis and Critical Control Points) principles, proactive sanitation measures are more effective in preventing contamination than reactive ones (Mortimore & Wallace, 2013). This highlights the need for poultry processors to adopt comprehensive and preventive sanitation frameworks.

The findings reveal that while all three poultry processors prioritize hygiene, their approaches differ in chlorine use, rejected poultry handling, blood management, and sanitation protocols. These variations underline the complex interplay between halal compliance, food safety, and public perception. Aligning hygiene practices with *tayyiban* principles is crucial to maintaining consumer trust while ensuring food safety. Future research should explore standardization efforts for halal hygiene guidelines to bridge the gaps in interpretation and implementation within the poultry industry.

4.11.2.3 Safe

The findings align with the *maqāṣid al-Sharī'ah* framework, particularly the principle of *Hifz al-Nafs* (protection of life) and *Hifz al-Din* (protection of religion). Ensuring that poultry is safe for consumption while adhering to halal requirements reflects the balance between religious compliance and consumer health (Bukhari et al., 2019).

Animal welfare in the halal poultry supply chain is essential, as emphasized by all participants. Islamic teachings stress humane treatment of animals (Qur'an 6:141), and ensuring that chickens arrive in optimal condition reflects adherence to both ethical and operational best practices. Previous studies (Fuseini et al., 2017b) support the necessity of minimizing stress before slaughter, as excessive stress can lead to increased mortality and compromised meat quality.

Stunning remains a debated topic in halal poultry processing. While it is permitted under certain conditions, it must not result in the death of the animal prior to slaughter (JAKIM, 2020c). The findings indicate that companies carefully calibrate voltage settings to weaken but not kill the chicken, in alignment with halal requirements (Sabow et al., 2017). This demonstrates a commitment to *Hifz al-Din*, ensuring that Islamic principles are upheld while maintaining operational efficiency.

The use of sharp knives is a fundamental requirement for halal slaughter, ensuring a swift and humane cut (Suliman et al., 2014). The data show that companies follow strict protocols for knife maintenance, including regular sharpening and sterilization. This aligns with *Hifz al-Nafs*, ensuring that the meat remains safe and of high quality for consumption.

Chlorine is used to eliminate bacterial contamination, yet it raises consumer concerns about chemical exposure. The findings suggest that companies adopt chlorine cautiously, ensuring food safety while addressing public scepticism. Studies (Riaz & Muhammad M. Chaudry, 2004) indicate that chlorine, when used within permissible limits, does not compromise halal integrity but rather enhances food safety, reinforcing the *tayyiban* (purity and wholesomeness) aspect of halal.

Continuous training and proper logistics management are essential to maintaining halal integrity post-slaughter. Employees receive halal awareness training to ensure compliance, a practice supported by JAKIM's Halal Assurance System (2019). Additionally, logistics practices such as cold chain management play a crucial role in preserving meat quality (Nakyinsige et al., 2012). The integration of technology, such as real-time tracking, further enhances transparency and accountability in the halal supply chain.

The findings emphasize that ensuring the safety dimension of halal poultry integrity requires a multi-faceted approach, incorporating ethical animal treatment, precise stunning techniques, sharp knives, controlled use of chlorine, comprehensive training, and robust logistics management. These practices align with Islamic principles, food safety standards, and consumer expectations, reinforcing the integrity of the halal poultry industry in Malaysia. Future research could explore the impact of technological advancements, such as AI-driven quality control systems, in further enhancing halal compliance.

4.11.2.4 Quality

The importance of MyGAP certification across all participants aligns with the principles of *tayyiban* (purity and wholesomeness) in Islamic jurisprudence. The adherence to veterinary standards ensures that poultry meets hygienic and quality benchmarks before entering the supply chain (Fischer, 2016).

The ante-mortem inspection conducted by P1 and P3 reflects the practice of ensuring the health and well-being of animals before slaughter, aligning with the Islamic requirement of humane treatment (Bonne & Verbeke, 2008b). This process prevents contaminated or diseased chickens from entering the food system, safeguarding consumer health (Tieman, 2011). P2's lack of mention of ante-mortem inspections may indicate reliance on supplier guarantees rather than internal checks, highlighting a potential gap in quality assurance.

The emphasis on sharp knives across all companies ensures compliance with Islamic guidelines for swift, humane slaughter, reducing animal suffering. The provision of automatic knife washing and sharpening systems, particularly in P3, enhances efficiency and hygiene in the slaughtering process (Lever & Miele, 2012). These practices align with Halal Critical Control Points (HCCP), ensuring consistent quality standards (Yusoff et al., 2015).

P3's computerized slaughtering system represents a significant advancement in ensuring efficiency and consistency in poultry processing. Such modernization aligns with Industry 4.0 innovations in food production, enhancing traceability and minimizing human error (Zailani et al., 2018). The absence of computerized systems in P1 and P2 suggests a more traditional or semi-automated approach, which may impact processing speed and quality consistency.

Logistics plays a vital role in maintaining halal integrity beyond the slaughterhouse. All companies ensure in-house transportation with chiller systems, minimizing risks associated with outsourcing (Tieman, 2012). P3's security and auditing protocols provide an additional layer of quality assurance, ensuring that logistics align with halal and industry standards.

Proper temperature control is essential in preserving poultry freshness. The findings reveal that all three participants adhere to optimal storage temperatures, which align with Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Points (HACCP) (van der Spiegel et al., 2012). The use of blast freezers in P2 ensures rapid cooling, which is a best practice in poultry storage to prevent microbial growth (Salama & Chennaoui, 2024).

The structured training programs implemented by P1, P2, and P3 reflect an industry-wide recognition that human expertise is crucial in maintaining halal integrity (Tieman & Hassan, 2015). Regular re-training, as emphasized in P1, aligns with continuous improvement principles (Deming, 1986) ensuring that staff remain knowledgeable about evolving halal and quality requirements.

The findings indicate that quality assurance is a fundamental component of maintaining halal integrity in the poultry supply chain. The certification of poultry farms, implementation of ante-mortem inspections, proper slaughtering techniques, technological advancements, logistics control, and staff training all contribute to ensuring high standards. The discussion highlights how these practices align with Islamic jurisprudence, industry best practices, and food safety regulations. Future research could explore the impact of digital tracking systems in enhancing transparency and quality control in halal poultry production.

4.11.3 Objective Three:

4.11.3.1 Government Regulations and Oversight

Enhanced Halal Certification Standards: Addressing Gaps in Regulatory Frameworks

The need for enhanced halal certification standards aligns with the principles of Institutional Theory, which suggests that regulatory structures influence industry compliance and legitimacy (DiMaggio & Powell, 1983). The findings indicate that while Malaysia has well-established halal standards, these need to be refined to ensure they remain relevant and comprehensive. The concerns raised by informants echo the challenges identified in previous studies (Tiemann, 2011; Zulfakar et al., 2014), which argue that the halal supply chain lacks a holistic framework that integrates all stages from farm to fork.

P6's argument that MS 2400 only covers certain aspects of the supply chain aligns with the Resource-Based View (RBV) Theory (Barney, 1991), which suggests that organizations need strategic resources such as clear regulatory guidelines to maintain a competitive advantage. Without a comprehensive supply chain standard, halal-certified companies may struggle to maintain integrity throughout the entire supply chain, increasing risks of non-compliance.

From a policy perspective, Malaysia could benefit from adopting an adaptive regulatory framework, as proposed by Regulatory Governance Theory (Braithwaite, 2008). This approach emphasizes dynamic, evidence-based regulation that evolves based on industry needs and stakeholder input. Focusing on specific areas, such as animal feed standards (as suggested by P4), would prevent unnecessary regulatory redundancy while addressing critical gaps in the supply chain.

Regular Audits and Inspections: Strengthening Governance through Effective Oversight

The unanimous agreement on the importance of audits aligns with Agency Theory (Eisenhardt, 1989), which highlights the need for monitoring mechanisms to ensure compliance between regulatory bodies (principals) and industry players (agents). Informants stress that frequent and surprise audits are essential to prevent companies from merely performing compliance theatrics. This concern is supported by studies on halal supply chain integrity (Ab Talib et al., 2015), which emphasize the role of stringent audits in reducing fraud and non-compliance.

P8's concern that audits do not necessarily measure integrity aligns with findings from Behavioral Ethics Theory (Treviño et al., 2006), which suggests that integrity is an intrinsic characteristic that cannot always be quantified through external audits. This implies that while audits are crucial, they should be supplemented with organizational integrity training and cultural shifts towards ethical compliance.

Additionally, P6's call for multi-agency audits reflects the Collaborative Governance Model (Ansell & Gash, 2008), which advocates for shared responsibility among different regulatory bodies. Given that food safety and halal integrity intersect, integrating halal audits with existing food safety audits conducted by the Ministry of Health and other agencies would enhance oversight efficiency and reduce regulatory fragmentation.

Based on the findings, the following policy recommendations are proposed:

1. Development of a Comprehensive Halal Supply Chain Standard: The government should introduce an integrated standard that explicitly outlines halal

requirements across all supply chain stages, ensuring that segregation measures and critical control points are clearly defined.

2. **Implementation of Adaptive Regulatory Governance:** Regulatory bodies should adopt a flexible approach that allows continuous refinement of standards based on industry developments and stakeholder feedback.
3. **Strengthening of Multi-Agency Audits:** The government should encourage collaboration between JAKIM, the Ministry of Health, and other relevant bodies to enhance the effectiveness of halal audits and inspections.
4. **Incorporation of Behavioral Compliance Measures:** Beyond technical audits, firms should be required to conduct internal ethical training programs to foster a culture of integrity in halal supply chain management.

This study highlights critical gaps in Malaysia's halal poultry supply chain regulations, particularly in certification standards and auditing mechanisms. The findings suggest that while Malaysia has robust halal frameworks, there is a need for more comprehensive, end-to-end supply chain guidelines and enhanced audit enforcement. Drawing on theories such as Institutional Theory, Agency Theory, and Regulatory Governance, this discussion underscores the importance of dynamic, evidence-based policies that adapt to industry needs. Future research should explore the integration of blockchain and digital tracking systems to further enhance halal integrity and transparency in Malaysia's poultry supply chain.

4.11.3.2 Halal Traceability and Transparency

Blockchain Technology and Halal Traceability

Blockchain technology aligns with the principles of transparency and trust in halal supply chains. The immutable nature of blockchain ensures that all transactions are securely recorded, minimizing the risk of fraud or misrepresentation (Blossey et al., 2019; Hew et al., 2020). The ability to track products from farm to fork aligns with the principles of *maqāṣid al-Sharī'ah*, particularly in preserving consumer rights and ensuring halal compliance. The informants' perspectives are consistent with previous

studies that emphasize the role of blockchain in enhancing supply chain integrity and consumer confidence (Kamilaris et al., 2019).

However, as P6 suggests, there is a need to balance technological advancements with practical considerations. Excessive regulatory burdens could create financial and logistical difficulties for small-scale poultry suppliers, potentially limiting their participation in the halal industry. This view resonates with institutional theory, which posits that regulatory frameworks must align with industry capabilities to ensure sustainable implementation (Barzelay & Scott, 1997).

P7's concern regarding the traceability of cut chicken parts reflects the limitations of current traceability systems. While blockchain can offer a solution, its effectiveness depends on industry-wide adoption and regulatory enforcement. This aligns with the resource-based view (RBV), which suggests that firms need adequate technological resources to implement blockchain effectively (Barney, 1991). P8's suggestion for computerized traceability systems supports the RBV perspective by highlighting the need for firms to invest in digital infrastructure to enhance halal compliance.

Supplier Verification and Halal Integrity

The unanimous agreement among informants on the importance of supplier verification underscores the critical role of upstream supply chain management in maintaining halal integrity. Supplier verification ensures that halal poultry supply chains remain free from cross-contamination and fraudulent practices (Fischer, 2016). The informants' emphasis on supplier audits and documentation aligns with transaction cost economics (TCE), which suggests that stringent verification mechanisms reduce risks associated with supplier opportunism (Baumol, 1986).

P5's concerns regarding foreign suppliers and non-Muslim dominance in the industry highlight the complexities of globalized halal supply chains. P6 and P7's emphasis on halal clauses in contracts aligns with agency theory, which suggests that contractual mechanisms can mitigate risks and ensure supplier compliance (Eisenhardt, 1989).

The role of supplier verification in ensuring halal compliance also relates to the concept of legitimacy within institutional theory. Firms that rigorously verify suppliers and comply with halal certification standards are more likely to gain consumer trust and regulatory approval (Suchman, 1995). P8's emphasis on slaughtering as a critical control point aligns with previous studies that highlight the need for robust verification processes at this stage to maintain halal integrity (Tieman, 2011).

The findings highlight the crucial role of blockchain technology and supplier verification in enhancing halal traceability and transparency. Blockchain offers a promising solution for ensuring an immutable record of halal compliance, though its implementation requires careful consideration of industry capabilities and regulatory requirements. Meanwhile, supplier verification remains a fundamental practice for mitigating risks and ensuring adherence to halal standards. The integration of these mechanisms within the halal poultry supply chain can enhance consumer confidence and uphold the principles of halal integrity.

4.11.3.3 Industry Collaboration and Best Practices

Industry Collaboration and Stakeholder Engagements

The significance of stakeholder engagement in the halal poultry supply chain aligns with theories on collaborative governance and stakeholder theory (Freeman & McVea, 2005). Effective stakeholder engagement fosters alignment on halal standards, facilitates knowledge exchange, and enables the industry to address emerging challenges collectively. The findings support previous research emphasizing the role of multi-stakeholder platforms in improving halal supply chain governance (Tieman, 2011).

P4's mention of ESG integration highlights the evolving nature of halal compliance, expanding beyond religious requirements to encompass environmental and ethical considerations. This perspective is consistent with the triple bottom line

approach (John Elkington, 1997), which advocates for a balance between economic, environmental, and social responsibilities.

P7's emphasis on the importance of forums reflects the need for structured engagement mechanisms. The resource-based view (Barney, 1991) suggests that knowledge-sharing forums enhance organizational capabilities, enabling firms to maintain competitive advantages. Additionally, P8's insights align with institutional theory (Barzelay & Scott, 1997), which proposed that industry-wide collaborations, particularly with government and certification bodies, reinforce regulatory compliance and industry credibility.

While stakeholder engagement was broadly supported, P5 and P6's lack of comments may indicate gaps in their exposure to collaborative efforts. This highlights the need for more inclusive stakeholder engagement initiatives to ensure wider industry participation.

Training and Capacity Building

The need for continuous training and capacity building aligns with human capital theory (Becker, 1993), which emphasizes the role of education and skill development in enhancing workforce productivity and compliance. The findings demonstrate that training is not only essential for regulatory adherence but also for addressing workforce diversity, particularly among foreign workers.

P4's assertion that training must involve all departments highlights the systemic nature of halal integrity. This supports the Total Quality Management (TQM) framework, which emphasizes organization-wide involvement in maintaining quality standards (Deming, 1986). Similarly, P5's concern about foreign workers aligns with cross-cultural management theories (Hofstede, 1980), which highlight how cultural differences influence workplace behaviours and perceptions of integrity.

P8's emphasis on continuous training resonates with organizational learning theory which suggests that systematic learning mechanisms enhance employee adaptability and long-term industry resilience. The consensus among informants emphasizes the urgency of establishing comprehensive, well-structured training

programs. Future efforts should focus on developing standardized halal training modules tailored to diverse workforce needs, incorporating both theoretical knowledge and practical applications.

The findings reveal a strong industry-wide recognition of the importance of collaboration and training in maintaining halal supply chain integrity. Stakeholder engagements, particularly with foreign companies, government agencies, and halal certification bodies, play a crucial role in knowledge sharing, addressing industry challenges, and promoting best practices. Simultaneously, continuous training and capacity building are essential to ensuring that employees at all levels, including foreign workers, understand and uphold halal principles.

By integrating stakeholder theory, human capital theory, and institutional perspectives, this discussion highlights the theoretical underpinnings of industry collaboration and training in the halal poultry supply chain. Strengthening these aspects will enhance compliance, improve workforce competency, and sustain industry growth. Future research should explore the development of standardized training frameworks and assess the long-term impacts of collaborative governance in the halal industry.

4.11.3.4 Consumers' Confidence and Educations

The findings align with established consumer behaviour and trust theories, particularly the Theory of Planned Behaviour (Ajzen, 1991), which propose that consumers' purchasing decisions are influenced by attitudes, subjective norms, and perceived behavioural control. In the context of halal poultry, consumer outreach and public disclosure serve as mechanisms that shape consumer attitudes and perceptions, reinforcing their trust in certified halal products.

Consumer Outreach and the Role of Awareness

Consumer outreach efforts, including halal awareness campaigns and educational initiatives, play a fundamental role in shaping consumer behaviour. As noted by Bonne and Verbeke (2008), halal food consumption is deeply tied to religious commitment and knowledge. Informants such as P4 and P5 emphasized that while halal awareness in Malaysia is relatively high, there remains a segment of consumers who remain sceptical, echoing findings from previous studies that highlight the need for continued halal literacy (Shah Alam & Mohamed Sayuti, 2011).

Moreover, Social Learning Theory (Albert Bandura, 1971) suggests that individuals acquire behaviours and beliefs through observation and interaction. P8's remarks about educating their community via social media reinforce this theory, demonstrating how consumer outreach efforts extend beyond traditional mass media and into digital platforms, fostering a more engaged and informed public.

Public Disclosure and Transparency Challenges

Transparency is a fundamental component of consumer trust, yet the discussion from informants indicates that full disclosure remains a challenge. This aligns with Signalling Theory (Spence, 1973), which suggests that businesses signal quality and compliance through certifications and labelling. P5 and P6 highlight that while halal certification provides a necessary assurance, it does not encompass full supply chain visibility, leading to partial transparency.

The ethical considerations of full disclosure, particularly concerning slaughtering practices, also resonate with Stakeholder Theory (Freeman & McVea, 2005). Businesses must balance the interests of various stakeholders including consumers, regulators, and industry players while ensuring ethical and religious compliance. P6's remarks about the reluctance of brand owners to provide complete transparency further emphasize the complexity of this issue, as excessive disclosure may lead to adverse consumer reactions.

Additionally, P4's discussion on consumer perception in relation to socio-political factors highlights the influence of Consumer Ethnocentrism Theory (Shimp & Sharma, 1987). The growing trend of boycotting products associated with certain

geopolitical entities underscores the role of consumer identity and values in halal purchasing decisions. This suggests that beyond labelling, companies must engage in strategic communication to address evolving consumer concerns.

Integrating Technology for Enhanced Trust

The findings also point towards potential technological solutions to address transparency limitations. Blockchain technology, as discussed in studies such as (Kim & Laskowski, 2018), presents an opportunity for the halal poultry industry to enhance traceability and ensure immutable records of the supply chain. While informants like P6 noted that full visibility remains unlikely due to sensitivities, blockchain-based halal certification could offer a compromise, providing authenticated information without disclosing graphic details.

The discussion underscores the need for a multifaceted approach to enhancing consumer confidence in Malaysia's halal poultry supply chain. Consumer outreach remains essential in addressing scepticism and increasing awareness, aligning with behavioural and social learning theories. Meanwhile, public disclosure, while instrumental in reinforcing trust, faces inherent challenges related to ethical sensitivities and commercial confidentiality.

The integration of technological advancements, such as blockchain, presents a promising avenue to balance transparency and discretion. Moving forward, industry stakeholders must collaborate to ensure comprehensive consumer education and a transparent yet ethical disclosure framework to uphold Malaysia's reputation as a global leader in halal food production.

4.11.4 Objective Four:

4.11.4.1 Protection of Religion

These findings emphasize the vital role of halal integrity in preserving religious values. The discussion is framed within the principles of *maqāṣid al-Sharī'ah*, particularly the preservation of religion (*hifz al-dīn*).

The responses from the informants align with the broader objectives of *maqāṣid al-Sharī'ah*, which emphasize the protection of faith through adherence to halal dietary laws. Ensuring that food remains halal at every stage of the supply chain reflects the Islamic legal principle that sustenance should be lawful and pure as a means of spiritual preservation (Kamali, 2017). The perspective shared by P1, P2, and P3 reinforces the need for a structured and transparent halal poultry industry that upholds these religious principles.

Beyond individual observance, the findings highlight that protecting halal integrity is a communal duty (*fard kifayah*). The viewpoints of P4 and P7 resonate with the concept of *maslahah* (public interest), which emphasizes that ensuring halal integrity serves the broader well-being of the Muslim community (Auda, 2008). This communal responsibility extends to regulatory bodies, industry stakeholders, and consumers, all of whom must actively participate in maintaining halal compliance.

The repeated references to Quranic verses by P5, P6, and P8 reinforce the idea that halal food is deeply rooted in Islamic teachings. Surah al-Baqarah 2:168 and Surah Al-Ma'idah 5:3 make it clear that consuming halal food is an act of faith. Furthermore, the emphasis on *tayyib* reflects modern concerns about food safety and ethical sourcing, illustrating how Islamic dietary laws remain relevant in today's halal industry (Bonne & Verbeke, 2008).

The findings affirm that religious protection within the halal poultry industry is deeply intertwined with Islamic teachings and communal responsibility. The emphasis on halal integrity, the collective duty to uphold religious values, and the Quranic principle of *halal and tayyib* all reinforce the broader objectives of *maqāṣid al-Sharī'ah*.

These insights provide a valuable foundation for further research on how halal supply chain integrity contributes to the protection of religious practices.

4.11.4.2 Protection of Life

The findings indicate that the halal industry is deeply interconnected with the Islamic objective of protecting human life. The principles of halal and *Tayyib* ensure that food consumption is both religiously permissible and physically beneficial. This aligns with *Hifz al-Nafs*, which prioritizes the preservation of life as a fundamental goal in Islamic law (Auda, 2008).

Furthermore, halal regulations take a preventive approach to food safety. By ensuring that food is free from harmful substances and produced under strict hygiene conditions, the halal industry contributes to disease prevention and public health. This echoes the legal maxim of *Sadd al-Dhara'i*, which seeks to prevent harm before it materializes (Dr. Mohamad Akram Laldin et al., 2006).

The ethical aspect of halal practices also plays a crucial role. The industry's emphasis on transparency, ethical sourcing, and hygiene aligns with Islamic moral obligations toward fairness and responsibility (Fischer, 2016). As reflected in the findings, halal integrity extends beyond individual consumption to global supply chains, ensuring ethical business practices.

Moreover, the universal applicability of halal standards underscores their significance beyond religious boundaries. The industry's stringent safety measures benefit not only Muslims but all consumers by enhancing food quality, reducing health risks, and promoting ethical consumption (Tieman, 2011c). This perspective positions halal certification as both a religious framework and a public health safeguard.

The findings from this analysis highlight that the halal industry plays an essential role in safeguarding human life, a fundamental objective of *maqāsid al-*

Sharī'ah. By ensuring high standards of food safety, hygiene, and ethical integrity, the halal industry aligns with Islamic principles of *Hifz al-Nafs* and *Sadd al-Dhara'i*. These preventive measures protect not only Muslim consumers but also the wider public, demonstrating that halal is not just a religious obligation but a global public health necessity.

4.11.4.3 Protection of Intellect

The findings align with the theoretical underpinnings of *maqāṣid al-Sharī'ah*, specifically the objective of *hifz al- ' aql* (protection of intellect). Al-Ghazālī (d. 1111) and Al-Shāḥibī (d. 1388) both emphasized that safeguarding intellect is necessary for ethical decision-making and societal well-being (Kamali, 2008).

Personal Conduct and Protection of Intellect

The integration of ethical personal conduct into halal poultry operations reflects the *maqāṣid* principle of intellectual preservation. As noted by P2, abstaining from intoxicants is not merely a religious mandate but a necessary step in ensuring sound decision-making. This aligns with the work of Ibn Taymiyyah (d. 1328), who argued that intoxicants impair rational thought and ethical behaviour (Hassan, 2018). A person is said to be intoxicated when "intellect has left him so he does not understand a little or much (anything at all)," according to Abu Hanifah (Musaev, 2017). Four It should be mentioned that using alcohol or being intoxicated is punishable under all *madhabs*. Therefore, even in little amounts, anything that intoxicates is forbidden in line with three Sunnite madhabs. Moreover, workplace policies highlighted by P3 reinforce the necessity of institutional safeguards, aligning with compliance frameworks in Islamic corporate governance (Dusuki & Abdullah, 2007).

P4's emphasis on hiring employees with a sound mind further aligns with contemporary discussions on ethical employment in the halal industry (Mustapha et al., 2024). Ensuring that employees adhere to halal principles not only supports compliance but also enhances operational integrity.

Continuous Training and Intellectual Development

The role of continuous training in protecting intellect aligns with the Islamic epistemological framework, which values lifelong learning (Azram, 2012). Informants such as P7 and P8 emphasized the necessity of structured training, reflecting Islamic teachings that emphasize education as a tool for intellectual and moral refinement (Mustapha et al., 2024).

Furthermore, P5's discussion of cultural differences among foreign workers highlights the need for tailored training programs. Similarly, the whistleblowing mechanism suggested by P5 aligns with the concept of *amr bil ma'ruf wa nahi anil munkar* (enjoining good and forbidding evil), which plays a crucial role in maintaining halal integrity (Abd Rahman @ Sabri & Wan Jusoh, 2019).

P1's emphasis on transparency and regulatory compliance is supported by studies on halal certification which highlight the need for continuous training in upholding industry credibility (Ab Talib, 2017). P8's focus on work pressure further aligns with discussions on employee well-being, indicating that ethical training can enhance mental resilience.

Overall, the findings highlight that the protection of intellect in the halal poultry industry is facilitated through ethical personal conduct and continuous training. The integration of *maqāṣid al-Sharī'ah* principles ensures that employees maintain cognitive clarity, uphold halal integrity, and contribute to an ethical work environment. Future research should explore the effectiveness of existing training programs and develop frameworks that enhance ethical awareness within halal industries.

4.11.4.4 Protection of Lineage

The protection of lineage (*hifz al-nasl*) is a fundamental objective within *maqāṣid al-Sharī'ah* (Auda, 2008). Halal and *tayyiban* food consumption ensures that individuals

maintain both physical and moral purity, thereby safeguarding future generations from genetic and behavioural corruption. The Qur’anic directive:

يَا أَيُّهَا النَّاسُ كُلُوا مِمَّا فِي الْأَرْضِ حَلَالًا طَيِّبًا ۚ

Translation: “O mankind, eat whatever is on earth (that is) lawful and pure”

Surah al-Baqarah (2): 168

From the *dalil* above, it reinforces the necessity of consuming pure sustenance for spiritual and physical well-being.

From a scientific perspective, dietary intake has a direct impact on genetic expression and epigenetics (Waterland & Jirtle, 2004). Consuming halal and *tayyiban* food, which is free from harmful substances, can influence genetic markers that promote healthy physiological development. Informants’ discussions on the influence of food on behaviour and mental health resonate with studies on the gut-brain axis, which link dietary quality to cognitive and emotional stability (Mayer, 2011).

The poultry industry’s role in maintaining halal integrity extends beyond religious obligation to food safety, hygiene, and ethical production. Implementing Hazard Analysis and Critical Control Points (HACCP) and ensuring a cold chain system mitigate contamination risks (Mortimore & Wallace, 2013). Informant P6’s concerns about bacterial contamination underscore the necessity of stringent safety measures in poultry processing to uphold halal and *tayyiban* principles.

Informant P7’s emphasis on ethical sincerity in food production aligns with Islamic business ethics, which advocate for honesty and consumer well-being (Dusuki & Abdullah, 2007). Ethical sincerity in halal food production fosters consumer trust, reinforcing the concept that ethical practices directly contribute to spiritual and societal well-being.

The findings indicate that consuming halal and *tayyiban* food plays a critical role in protecting lineage by ensuring health, genetic integrity, and ethical responsibility in food production. These findings bridge Islamic principles with scientific insights on nutrition, epigenetics, and food safety, emphasizing the need for comprehensive industry regulations and ethical food production practices. Upholding halal and *tayyiban* standards within the poultry industry is not just a religious obligation but a multidimensional effort ensuring long-term societal and biological benefits for future generations.

4.11.4.5 Protection of Wealth

Protection of Wealth through the Halal Socio-Economy

The findings align with Islamic economic principles, particularly *maslahah* (public interest) and *maqāṣid al-Sharī'ah*. The protection of wealth (*Hifz al-Mal*) is a core component of the *maqāṣid* framework, ensuring that economic activities are ethical, sustainable, and beneficial to the community (Dusuki & Abdullah, 2007). By prioritizing Muslim employment and ethical business practices, the halal poultry industry aligns with socio-economic justice and contributes to financial inclusivity (Chapra, 2000).

Job creation for Muslims, as highlighted by P1, P3, and P7, resonates with the Islamic Work Ethic (IWE), which advocates for meaningful employment that fosters economic self-sufficiency (A. J. Ali, 2006). Furthermore, P4's emphasis on increasing Bumiputra participation aligns with Malaysia's Halal Industry Master Plan, which seeks to empower local entrepreneurs and reduce reliance on foreign suppliers (HDC, 2020). The efficient utilization of by-products (P2) supports the circular economy concept, minimizing waste while maximizing resource efficiency (Ellen, 2024). In Islamic finance, this corresponds with *Istislah* (public benefit), ensuring sustainability and ethical economic practices (Al-ayubi, 2021).

Protection of Wealth through the Halal Value Chain

The concept of a halal value chain extends beyond production to encompass financial, operational, and legal safeguards. The integration of Islamic finance principles, as highlighted by P6, reflects the importance of Shariah-compliant financial instruments such as Takaful and Islamic banking in ensuring economic resilience (Obaidullah & Khan, 2011). These financial mechanisms provide protection against economic uncertainties while adhering to ethical investment principles.

P8's assertion that proper supply chain management safeguards wealth aligns with the agency theory, which emphasizes transparency and accountability in business transactions (Jensen & Meckling, 2012). The enforcement of halal compliance in the poultry supply chain prevents fraud and ensures consumer trust, reinforcing the stakeholder theory, which prioritizes the interests of all involved parties (Freeman & McVea, 2005).

The halal value chain also resonates with supply chain integrity theories, such as the Resource-Based View (RBV), which argues that firms maintaining stringent halal standards gain competitive advantage (Barney, 1991). By ensuring halal integrity across all business transactions, firms secure their market position and maintain consumer trust.

The study's findings illustrate a dual approach to wealth protection in the halal poultry industry: socio-economic empowerment and value chain integrity. The halal socio-economy fosters wealth creation through employment and economic participation, while the halal value chain ensures ethical and financial sustainability. From an Islamic perspective, wealth protection is not merely about accumulation but also about distribution and ethical utilization (Iqbal & Mirakhor, 2013). The integration of *maqāsid al-Sharī'ah* in the halal industry ensures that financial gains are aligned with Islamic values, promoting social welfare and economic justice (Kamali, 2008).

In conclusion, the protection of wealth in the halal poultry industry is a multi-dimensional concept that balances economic growth, ethical governance, and financial sustainability. This study reinforces the significance of holistic halal business models,

where economic opportunities and halal compliance work in tandem to preserve wealth for the betterment of society.



CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The final chapter provides a summary of the study. Additionally, it summarized the theoretical and practical contributions of this research. The chapter also addresses the limitations of the study, which sets the stage for future research and recommendations and directions. The final section presents the summary of the chapter.

5.2 CONTRIBUTION OF THE RESEARCH

The first objective of this research is to investigate the idea of halal supply chain integrity. The researcher extracted the data from two main sources that are commonly used in the Malaysian Halal Industry which are the Manual Procedure for Malaysia Halal Certification (Domestic) 2020 and MS1500:2019 Halal Food-General Requirements (Third revision). These documents are used for the document analysis for answering the RQ1. These documents provide comprehensive guidelines on maintaining halal integrity throughout the supply chain process. Both documents provide comprehensive guidelines to ensure halal integrity in the poultry supply chain in Malaysia. MPPHM (Domestic) 2020 offered detailed procedural requirements focusing on operational guidelines, halal schemes and specific halal processes. Meanwhile, MS1500:2019 provides a broader framework covering overall food safety, quality assurance and general principles applicable across various contexts. By analyzing these documents, stakeholders can gain a comprehensive understanding of the requirements and ensure the halal integrity of four different integrity dimensions which are pure, hygiene, quality and safe from the poultry supply chain industries in Malaysia. The research establishes the groundwork for further studies into the

implementation and improvement of halal supply chain integrity by providing a thorough definition of the concept.

The second objective focuses on empirically investigating the application of halal supply chain integrity within Malaysia's poultry industry. This involves conducting fieldwork to assess how halal principles are operationalized across various stages of the supply chain from source to point of consumer purchase. By scrutinizing current practices, the research identifies strengths, weaknesses, and areas where integrity may be compromised. Such insights are crucial for stakeholders, including policymakers, industry regulators, and halal certifying bodies, to streamline practices and ensure compliance with halal standards. These practices can be viewed from four different integrity dimensions which are pure, hygiene, quality and safe.

Building upon the findings from objective two, the third objective seeks to pinpoint opportunities for enhancing halal supply chain integrity. This includes proposing recommendations for improving practices, enhancing transparency, and fortifying regulatory frameworks. By identifying and addressing gaps in current practices, the research contributes actionable insights that can bolster consumer confidence, foster industry growth, and uphold Malaysia's reputation as a global leader in halal certification.

The final objective aims to propose a conceptual framework grounded in *maqāṣid al-Sharī'ah* principles for practicing integrity within the halal supply chain industry. *Maqāṣid al-Sharī'ah*, which focuses on the broader objectives and goals of Islamic law, provides a robust framework for designing a holistic approach to halal supply chain management. By integrating these principles into a conceptual framework, the research not only provides a theoretical foundation but also offers practical guidelines for stakeholders to uphold integrity while meeting the diverse needs of consumers and adhering to regulatory requirements.

In conclusion, this research contributes significantly to the field of halal supply chain integrity within Malaysia's poultry industry by systematically addressing key objectives. By conceptualizing halal integrity, investigating current practices, identifying enhancement opportunities, and proposing a framework rooted in Islamic

ethical principles, the research enhances understanding, informs policy, and advances practices within the halal poultry supply chain. Ultimately, these contributions aim to ensure that halal products meet rigorous standards, uphold consumer trust, and sustain the industry's ethical and economic viability in Malaysia and beyond.

5.3 RESEARCH LIMITATIONS

Recognizing and accepting research constraints is essential to the quality and thoroughness of any academic research. The limits and potential flaws in a study's design, technique, or scope are referred to as research limitations. These can affect the results and the degree to which they can be applied to other contexts. To provide a comprehensive understanding of the research findings, several constraints must be taken into account in the context of this study.

The broadness and applicability of the study's findings represent a key limitation. To obtain profound insights into certain phenomena, qualitative research usually entails an in-depth investigation of particular cases or a small number of participants. This method may not be entirely representative of the population, despite offering extensive, detailed data. The conclusions drawn from the interviews regarding the halal poultry supply chain might represent the opinions and methods of a particular stakeholder group, but they might not apply to all industry participants in Malaysia or other nations with dissimilar legal and cultural frameworks.

The sample size and the selection procedure may impose limitations. Purposive sampling is a common technique in qualitative research, in which participants are chosen according to established criteria that are pertinent to the study subject. Selection bias may result from this approach, even though it guarantees that the participants possess pertinent expertise or knowledge. Other relevant voices may have been excluded from this study's informant group due to factors like accessibility and willingness to participate. Furthermore, a lower sample size might capture less diverse

viewpoints and experiences, which would limit the range of conclusions that could be made.

This study's findings are context-specific, and influenced by Malaysia's sociocultural, economic, and regulatory landscape. Government regulations, religious precepts, and local customs all influence the practices and attitudes around halal integrity throughout the poultry supply chain. As a result, there may be limited generalizability of the findings. Context is crucial in qualitative research because it can produce different results in the future under various regulations or in other regions.

Time limitations could influence how thorough the study is. Regulations and procedures governing the halal poultry supply chain are subject to constant change. The information gathered is a snapshot of the business as it is right now, and it could change as a result of new developments in technology, modifications to regulations, or changes in consumer behaviour. The integrity practices in the halal poultry supply chain would be better understood by longitudinal studies which track changes over time.

Acknowledging the limitations of a study is not an admission of failure but a crucial component of rigorous research. Because of its transparency, readers can evaluate the results and their significance critically. Understanding these limitations emphasizes the necessity for rigorous interpretation of the findings and rigorous generalization in the research of the integrity practice of the Malaysian halal poultry supply chain. To provide a more thorough understanding of the integrity procedures of the halal poultry supply chain, future studies should try to solve these constraints by broadening the scope, boosting the sample size, including longitudinal techniques, and investigating various situations.

5.4 AREAS OF FUTURE RESEARCH

i) Sustainability Practices in Halal Poultry Production

Analyze the integration of sustainable practices in halal poultry farming and processing. Sustainability is a vital component of halal (*tayyib*) standards. Future research should explore sustainable farming methods, waste management practices, and the utilization of by-products in the halal poultry industry. The impact of these practices on environmental conservation and economic efficiency should be assessed, providing a framework for implementing sustainable solutions within the industry.

ii) Comparative Studies on Halal Standards Across Different Countries

Conduct comparative analyses of halal standards and certification processes across different countries. Understanding how different countries implement and enforce halal standards can provide insights for improving Malaysia's halal certification system. Comparative research should highlight best practices, regulatory differences, and opportunities for harmonizing halal standards internationally. This could facilitate global trade and enhance the credibility of Malaysian halal products.

By focusing on these areas, future research can provide valuable insights and practical solutions to enhance the integrity and efficiency of the halal poultry supply chain in Malaysia, ensuring it meets both religious and consumer expectations while promoting economic growth and sustainability.

REFERENCES

Al-Quran al-Karim

- Ab Talib, M. S. (2017). Motivations and benefits of halal food safety certification. *Journal of Islamic Marketing*, 8(4), 605–624. <https://doi.org/10.1108/JIMA-08-2015-0063>
- Ab Talib, M. S., Hamid, A. B. A., & Zulfakar, M. H. (2015). Halal supply chain critical success factors: A literature review. *Journal of Islamic Marketing*, 6(1), 44–71. <https://doi.org/10.1108/JIMA-07-2013-0049>
- Ab Talib, M. S., & Mohd Johan, M. R. (2012). Issues in Halal Packaging: A Conceptual Paper. *International Business and Management*, 5(2), 94–98. <https://doi.org/10.3968/j.ibm.1923842820120502.1080>
- Abd El-Rahim, I. H. A., Mashat, B. H., & Fat'hi, S. M. (2023). Effect of halal and stunning slaughter methods on meat quality: A review. *International Food Research Journal*, 30(2), 290–302. <https://doi.org/10.47836/ifrj.30.2.02>
- Abd Rahman @ Sabri, N. A., & Wan Jusoh, W. H. (2019). Amar Ma'Ruf Nahi Mungkar Approach According To Al-Jilani in Kitab Al-Ghunyah Against Integrity Problem. *Malaysian Journal For Islamic Studies*, 3(2), 12–20.
- Abdallah, A., Rahem, M. A., & Pasqualone, A. (2021). The multiplicity of halal standards: a case study of application to slaughterhouses. *Journal of Ethnic Foods*, 8(1). <https://doi.org/10.1186/s42779-021-00084-6>
- Abdul Rahman, S. (2017). Religion and animal welfare—An Islamic perspective. *Animals*, 7(2), 1–6. <https://doi.org/10.3390/ani7020011>
- Abdurofi, I., Ismail, M. M., Kamal, H. A. W., & Gabdo, B. H. (2017). Economic analysis of broiler production in Peninsular Malaysia. *International Food Research Journal*, 24(4), 1387–1392.
- Abu, A., Arshad, R., Abdullah, C., Bakar, A., & Ramli, Z. (2018). Capturing the Halal Food Market: Limitations of Halal Integrity within the Supply Chain, the

- Malaysian Experience. *American Journal of Economics*, 8(6), 272–278. <https://doi.org/10.5923/j.economics.20180806.06>
- Aday, S., & Aday, M. S. (2020). Impact of COVID-19 on the food supply chain. *Food Quality and Safety*, 4(4), 167–180. <https://doi.org/10.1093/fqsafe/fyaa024>
- Aghwan, Z. A., Bello, A. U., Abubakar, A. A., Imlan, J. C., & Sazili, A. Q. (2016). Efficient halal bleeding, animal handling, and welfare: A holistic approach for meat quality. *Meat Science*, 121, 420–428. <https://doi.org/10.1016/j.meatsci.2016.06.028>
- Ahmad, A. N., Zulfiqar, S. B., Mohd Farudz, B. Z., & Zulkifili, N. N. (2022). Halal Integrity in Supply Chain: The Impacts of Fake Halal Meat Cartel Scandal towards Halal Integrity. In N. A. Abdul Rahman, A. Hassan, & H. Z. Abdul Majid (Eds.), *Halal Logistics and Supply Chain Management Recent Trends and Issues* (First Edit, pp. 132–150). Taylor & Francis. <https://doi.org/doi.org/10.4324/9781003223719>
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. <https://doi.org/10.47985/dcidj.475>
- Alam, M. J., Begum, I. A., Al Mamun, M. A., Iqbal, M. A., & McKenzie, A. M. (2025). The adoption of biosecurity measures and its influencing factors in Bangladeshi layer farms. *Discover Sustainability*, 6(1). <https://doi.org/10.1007/s43621-025-00814-9>
- Al-ayubi, S. (2021). *MAQASID AL-SHARIA IN ISLAMIC FINANCE*. 4(2), 197–215.
- Albert Bandura. (1971). Social Learning Theory. In *General Learning Press*. General Learning Cooperation. <https://doi.org/10.18177/sym.2020.61.1.sr.11518>
- Ali, A. J. (2006). Islamic Perspectives on Management and Organization. *Reviews in Religion & Theology*, 13(3), 330–333. https://doi.org/10.1111/j.1467-9418.2006.00297_1.x
- Ali, M. H., Chung, L., Kumar, A., Zailani, S., & Tan, K. H. (2021). A sustainable Blockchain framework for the halal food supply chain: Lessons from Malaysia. *Technological Forecasting and Social Change*, 170. <https://doi.org/10.1016/j.techfore.2021.120870>

- Ali, M. H., & Suleiman, N. (2018). Eleven shades of food integrity: A halal supply chain perspective. *Trends in Food Science and Technology*, 71(April 2017), 216–224. <https://doi.org/10.1016/j.tifs.2017.11.016>
- Ali, M. H., Tan, K. H., & Ismail, M. D. (2017). A supply chain integrity framework for halal food. *British Food Journal*, 119(1), 20–38. <https://doi.org/10.1108/BFJ-07-2016-0345>
- Ali, M. H., Zhan, Y., Alam, S. S., Tse, Y. K., & Tan, K. H. (2017). Food supply chain integrity: the need to go beyond certification. *Industrial Management & Data Systems*, 117(8), 1589–1611. <https://doi.org/10.1108/IMDS-09-2016-0357>
- al-Qaradawi, Y. (2013). *The Lawful and the Prohibited in Islam: الحلال والحرام في الإسلام*. <https://books.google.com.my/books?id=iXCNAQAAQBAJ>
- Alserhan, B. A. (2020). The Principles of Islamic Marketing. In *The Principles of Islamic Marketing* (Issue October). <https://doi.org/10.4324/9781003075110>
- Al-Teinaz, Y. R., Spear, S., & H. A. Abd El-Rahim, I. (2020). The Halal Food Handbook. In Y. R. Al-Teinaz, S. Spear, & H. A. A. E.-R. Ibrahim (Eds.), *John Wiley & Sons Ltd*. <https://doi.org/10.1002/9781118823026>
- Alzeer, J., Rieder, U., & Hadeed, K. A. (2018). Rational and practical aspects of Halal and Tayyib in the context of food safety. *Trends in Food Science and Technology*, 71(November), 264–267. <https://doi.org/10.1016/j.tifs.2017.10.020>
- Ambali, A. R., & Bakar, A. N. (2014). People's Awareness on Halal Foods and Products: Potential Issues for Policy-makers. *Procedia - Social and Behavioral Sciences*, 121(September 2012), 3–25. <https://doi.org/10.1016/j.sbspro.2014.01.1104>
- Anggraini, W., Ciptono, W. S., Lusiantoro, L., & Tjahjono, H. K. (2023). Halal Food Integrity: Systematic Literature Review and Research Agendas. *Proceedings of the 13th Annual International Conference on Industrial Engineering and Operations Management*, 1360–1373. <https://doi.org/10.46254/an13.20230406>
- Ansell, C., & Gash, A. (2008). Collaborative Governance in Theory and Practice. *Journal of Public Administration Research and Theory*, 18(4), 543–571. <https://doi.org/10.1093/jopart/mum032>

- Arif, S., & Sidek, S. (2015). Application of halalan tayyiban in the standard reference for determining Malaysian halal food. *Asian Social Science*, 11(17), 116–129. <https://doi.org/10.5539/ass.v11n17p116>
- Ariffin, A. S., Mohtar, S., & Baluch, N. (2014). Broiler Industry With Emphasis on Short Supply Chain in Malaysia. *The 4th International Conference on Technology and Operations Management*, 1–13.
- Ariffin, M. F., Syahadah, N., Riza, M., Hamid, F. A., Awae, F., & Nasir, B. M. (2021). Halal Food Crime in Malaysia: An Analysis On Illegal Meat Cartel Issues. *Journal of Contemporary Issues in Business and Government*, 27(02), 0–5. <https://doi.org/10.47750/cibg.2021.27.02.152>
- Artadita, S., & Lestari, Y. D. (2019). Halal Slaughterhouse Certification: The Comparison between Two Halal Certification Bodies. *Binus Business Review*, 10(3), 211–227. <https://doi.org/10.21512/bbr.v10i3.5968>
- Ashraf, A., Abd Rahman, F., & Abdullah, N. (2018). Poultry Feed in Malaysia: An Insight into the Halalan Toyayiban Issues. *Proceedings of the 3rd International Halal Conference (INHAC 2016)*, *Inhac*, 511–531. https://doi.org/10.1007/978-981-10-7257-4_45
- Auda, J. (2008). *Maqasid al-Shariah as Philosophy of Islamic Law A Systems Approach* (The International Institute of Islamic Thought, Ed.). Biddles Limited.
- Awan, J. A., & Sohaib, M. (2016). Halal and humane slaughter; Comparison between Islamic teachings and modern methods. *Pakistan Journal of Food Sciences*, 26(4), 2226–5899.
- Aziz, A., Bakar, N. A., & Zakaria, Z. (2020). Unsafe Ingredients Included in Malaysian Food Drug Interphase (FDI) Products: Toyayiban perspective. *Malaysian Journal of Halal Research*, 3(2), 63–68. <https://doi.org/10.2478/mjhr-2020-0011>
- Aziz, N., Bakry, N., Habibi Mz, M., & Siddiq Armia, M. (2023). The paradigm of modern food products and its relevance with the concept of food in the Quran. *Heliyon*, 9(11), e21358. <https://doi.org/10.1016/j.heliyon.2023.e21358>
- Azmi, F. R., Abdullah, A., Bakri, M. H., Musa, H., & Jayakrishnan, M. (2018). The adoption of halal food supply chain towards the performance of food

- manufacturing in Malaysia. *Management Science Letters*, 8(7), 755–766. <https://doi.org/10.5267/j.msl.2018.5.010>
- Azram, M. (2012). Epistemology -An Islamic Perspective. *IIUM Engineering Journal*, 12(5), 179–187. <https://doi.org/10.31436/iiumej.v12i5.240>
- Baharuddin, A. S., Ismail, W. A. F. W., Mutalib, L. A., Ahmad, M. H., Razak, R., Saharudin, N. S., & Rahim, A. A. (2019). An Appraisal of Maqāsid Al-Shari‘ah Classic and Recent Literature: Systematic Analysis. *Library Philosophy and Practice*, 2019(January).
- Bahri, S. I. S., Ariffin, A. S., & Mohtar, S. (2019). Critical Review on Food Security in Malaysia for Broiler Industry. *International Journal of Academic Research in Business and Social Sciences*, 9(7), 869–876. <https://doi.org/10.6007/ijarbss/v9-i7/6186>
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120.
- Barzelay, M., & Scott, W. R. (1997). Institutions and Organizations. *The British Journal of Sociology*, 48(1), 161. <https://doi.org/10.2307/591930>
- Baumol, W. J. (1986). Williamson ’ s The Economic Institutions of Capitalism. *Journal of Economics*, 17(2), 279–286.
- Becker, G. S. (1993). *Human Capital. A Theoretical and Empirical Analysis with Special Reference to Education. Winner of the Nobel Prize in Economics*.
- Benzertiha, A., Kieronczyk, B., Rawski, M., Józefiak, A., Mazurkiewicz, J., Józefiak, D., Messikh, M. S., & Swiatkiewicz, S. (2018). Cultural and practical aspects of halal slaughtering in food production. *Medycyna Weterynaryjna*, 74(6), 371–376. <https://doi.org/10.21521/mw.6023>
- Bernama. (2023). *HDC to develop new digital platform for faster halal certification process*. Selangor Journal. <https://selangorjournal.my/2023/10/hdc-to-develop-new-digital-platform-for-faster-halal-certification-process/>
- Blossey, G., Eisenhardt, J., & Hahn, G. J. (2019). Blockchain technology in supply chain management: An application perspective. *Proceedings of the Annual Hawaii*

- International Conference on System Sciences, 2019-Janua*, 6885–6893.
<https://doi.org/10.24251/hicss.2019.824>
- Bonne, K., & Verbeke, W. (2008a). Muslim consumer trust in halal meat status and control in Belgium. *Meat Science*, 79(1), 113–123.
<https://doi.org/10.1016/j.meatsci.2007.08.007>
- Bonne, K., & Verbeke, W. (2008b). Religious values informing halal meat production and the control and delivery of halal credence quality. *Agriculture and Human Values*, 25(1), 35–47. <https://doi.org/10.1007/s10460-007-9076-y>
- Braithwaite, J. (2008). *Regulatory Capitalism How it Works, Ideas for Making it Work Better*. Edward Elgar Publishing.
- Bukhari, S. F. H., Woodside, F. M., Hassan, R., Shaikh, A. L., Hussain, S., & Mazhar, W. (2019). Is religiosity an important consideration in Muslim consumer behavior: Exploratory study in the context of western imported food in Pakistan. *Journal of Islamic Marketing*, 10(4), 1288–1307. <https://doi.org/10.1108/JIMA-01-2018-0006>
- Chandia, M., & Soon, J. M. (2018). The variations in religious and legal understandings on halal slaughter. *British Food Journal*, 120(3), 714–730.
<https://doi.org/10.1108/BFJ-03-2017-0129>
- Chang, S. E., & Chen, Y. (2020). When blockchain meets supply chain: A systematic literature review on current development and potential applications. *IEEE Access*, 8, 62478–62494. <https://doi.org/10.1109/ACCESS.2020.2983601>
- Chapra, M. U. (2000). The Future of Economics: An Islamic Perspective. *Journal of Islamic Studies*, 9(1), 110–112. <https://doi.org/10.1093/jis/9.1.110>
- Chopra, S., & Meindl, P. (2007a). Supply Chain Management. Strategy, Planning & Operation. In *Das Summa Summarum des Management*.
https://doi.org/10.1007/978-3-8349-9320-5_22
- Chopra, S., & Meindl, P. (2007b). Supply Chain Management. Strategy, Planning & Operation. In *Das Summa Summarum des Management*.
https://doi.org/10.1007/978-3-8349-9320-5_22

- Creswell, J. W. (2009). *Research Design Qualitative, Quantitative, and Mixed Methods Approaches* (K. D. Creswell, Ed.; Third Edit). SAGE Publications, Inc.
- Davidson, R. K., Antunes, W., Madslien, E. H., Belenguer, J., Gerevini, M., Torroba Perez, T., & Prugger, R. (2017). From food defence to food supply chain integrity. *British Food Journal*, 119(1), 52–66. <https://doi.org/10.1108/BFJ-04-2016-0138>
- Deepa, P. (2025). *Precedence Research*. <https://www.precedenceresearch.com/halal-food-market>
- Deming, W. E. (1986). *Out of Crisis*. Cambridge University Press. https://doi.org/10.1007/1-4020-0612-8_231
- Department of Standards Malaysia. (2019). MS 1500:2019 Halal Food - General Requirements (Third Revision). *Standards Malaysia*, 1–22.
- Dimaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48(June), 147–160. <https://doi.org/10.2307/2095101>
- DOA. (2013). *MyGAPS*. <http://mygap.doa.gov.my/>
- Dr. Mohamad Akram Laldin, Dr. Mek Wok Mahmud, & Dr. Mohd. Fuad Sawari. (2006). Maqasid Syariah Dalam Perlaksanaan Wakaf. *Konvensyen Wakaf Kebangsaan*, 1–16.
- Dusuki, A. W., & Abdullah, N. I. (2007). Maqasid al-Shari'ah, Maslahah, and Corporate Social Responsibility. *American Journal of Islam and Society*, 24(1), 25–45. <https://doi.org/10.35632/ajis.v24i1.415>
- Dusuki, A. W., & Bouheraoua, S. (2011). The Framework of Maqasid al-Shari'ah and its Implication for Islamic Finance. *ICR Journal*, 2(2), 316–336. <https://doi.org/10.52282/icr.v2i2.651>
- Eisenhardt, K. (1989). Agency Theory: An Assessment and Review. *Academy of Management Review*, 14(1), 57–74.
- Ellen, M. (2024). *Circular Economy Principles*. <https://www.ellenmacarthurfoundation.org/circular-economy-principles>

- El-Mesawi, M. E. T. (2020). Maqāṣid al-sharī'ah: Meaning, scope and ramifications. *Al-Shajarah*, 25(2), 263–295.
- Emi Normalina, O., Harlina Suzana, J., & Muhamad Rahimi, O. (2011). Assessing Halalan-Toyyiban food supply chain in the poultry industry. *Procedia - Social and Behavioral Sciences*, 00(2011).
- Firdaus Mohamad, M., Mohammed, U., Mawardi, F., & bin Abdullah, H. (2019). Islamic Marketing: Promotional campaign in the perspective of Maqasid As-Shariah in Malaysia. *Asean Entrepreneurship Journal*, 5(1), 29–39.
- Fischer, J. (2016). Manufacturing halal in Malaysia. *Contemporary Islam*, 10(1), 35–52. <https://doi.org/10.1007/s11562-015-0323-5>
- Food and Agriculture Organization (FAO). (2013). Poultry development. In *The role of poultry in human nutrition*.
- Freeman, R. E. E., & McVea, J. (2005). A Stakeholder Approach to Strategic Management. *SSRN Electronic Journal*, January 2001. <https://doi.org/10.2139/ssrn.263511>
- Fuseini, A., Knowles, T. G., Hadley, P. J., & Wotton, S. B. (2016). Halal stunning and slaughter: Criteria for the assessment of dead animals. *Meat Science*, 119, 132–137. <https://doi.org/10.1016/j.meatsci.2016.04.033>
- Fuseini, A., Wotton, S. B., Hadley, P. J., & Knowles, T. G. (2017a). The compatibility of modern slaughter techniques with halal slaughter: A review of the aspects of “modern” slaughter methods that divide scholarly opinion within the muslim community. *Animal Welfare*, 26(3), 301–310. <https://doi.org/10.7120/09627286.26.3.301>
- Fuseini, A., Wotton, S. B., Hadley, P. J., & Knowles, T. G. (2017b). The Compatibility of Modern Slaughter Techniques With Halal Slaughter: A Review of the Aspects of “Modern” Slaughter Methods That Divide Scholarly Opinion Within the Muslim Community. *Animal Welfare*, 26(3), 301–310. <https://doi.org/10.7120/09627286.26.3.301>
- Fuseini, A., Wotton, S. B., Hadley, P. J., & Knowles, T. G. (2017c). The perception and acceptability of pre-slaughter and post-slaughter stunning for Halal production:

- The views of UK Islamic scholars and Halal consumers. *Meat Science*, 123, 143–150. <https://doi.org/10.1016/j.meatsci.2016.09.013>
- Ghazali, M. R. (2014). Kepentingan Maqasid Syariah dalam Berfatwa di Malaysia. *مجلة إدارة و بحوث الفتاوى*, 4, 7–32. <https://doi.org/10.12816/0010033>
- Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Gunardi, S. (2021). Konsep Halalan Tayiban (HT) dan Aplikasinya Dalam Program Pelatihan di Institut Penyelidikan Produk Halal (IPPH), Universiti Putra Malaysia (UPM). *Journal of Fatwa Management and Research*, 24(1), 63–77. <https://doi.org/10.33102/jfatwa.vol24no1.337>
- Halaseh, L. Al, & Sundarakani, B. (2012). Study on quality attributes of halal food supply chain. *International Journal of Logistics Economics and Globalisation*, 4(1/2), 20. <https://doi.org/10.1504/ijleg.2012.047212>
- Haleem, A., Khan, M. I., & Khan, S. (2019). Halal certification, the inadequacy of its adoption, modelling and strategising the efforts. *Journal of Islamic Marketing*. <https://doi.org/10.1108/JIMA-05-2017-0062>
- Haleem, A., Khan, M. I., & Khan, S. (2020). Halal certification, the inadequacy of its adoption, modelling and strategising the efforts. *Journal of Islamic Marketing*, 11(2), 393–413. <https://doi.org/10.1108/JIMA-05-2017-0062>
- Haleem, A., Khan, M. I., & Khan, S. (2021). Understanding the Adoption of Halal Logistics through Critical Success Factors and Stakeholder Objectives. *Logistics*, 5(2). <https://doi.org/10.3390/logistics5020038>
- Hanani, Y., & Safian, M. (2013). An analysis on Islamic rules on drugs. *International Journal of Education and Research*, 1(9), 1–16. www.ijern.com
- Hashim, H. I. C., & Shariff, S. M. M. (2016). Halal Supply Chain Management Training: Issues and Challenges. *Procedia Economics and Finance*, 37(16), 33–38. [https://doi.org/10.1016/s2212-5671\(16\)30089-2](https://doi.org/10.1016/s2212-5671(16)30089-2)
- Hashim, H., Md Saad, N., Khalid, H., & Laluddin, H. (2019). Halal compliance in poultry industry: A review of regulatory system in Malaysia. *International*

- Journal of Academic Research in Business and Social Sciences*, 9(12), 486–494.
<https://doi.org/10.6007/IJARBSS/v9-i12/6744>
- Hasnul, H. I., Nazmi, M. S., & Mat Amin, M. Z. (2015). *Broiler Industry in Malaysia*. FFTC Agricultural Policy Platform. <https://ap.fftc.org.tw/article/963>
- HDC. (2020). Halal Industry Master Plan 2030 : Executive Summary. *Ministry of Economic Affairs*, 1–12. <https://www.hdcglobal.com/wp-content/uploads/2020/02/Halal-Industri-Master-Plan-2030.pdf>
- Hew, J.-J., Wong, L.-W., Tan, G. W.-H., Ooi, K.-B., & Lin, B. (2020). The blockchain-based Halal traceability systems: a hype or reality? *Supply Chain Management*, 25(6), 863–879. <https://doi.org/10.1108/SCM-01-2020-0044>
- Hugos, M. (2011). Essentials of Supply Chain Management. In *Essentials of Supply Chain Management* (Third). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118386408>
- Ibn Ashur. (2006). Ibn Asyur Treatise on *Maqāṣid al-Sharī'ah*. In *International Institute of Islamic Thought*. http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SYSTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI
- IMARC. (2020). *Halal Food Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2020-2025*. IMARC. https://www.researchandmarkets.com/reports/5577923/halal-food-market-global-industry-trends-share?utm_source=GNOM&utm_medium=PressRelease&utm_code=hs87gv&utm_campaign=1693319+-+Global+Halal+Food+Market+Report+2022%3A+A+%243%2C907.7+Billion+Industry+by+202
- Iqbal, Z., & Mirakhor, A. (2013). Islam's Perspective on Financial Inclusion. In *Economic Development and Islamic Finance*. https://doi.org/10.1596/9780821399538_ch06

- ISA HALAL. (2023). *ISA HALAL*. Feb. <https://www.isahalal.com/news-events/blog/glimpse-global-halal-industry-2023>
- Jabatan Perkhidmatan Veterinar. (2022). *Perangkaan Ternakan 2022/2023*. https://www.dvs.gov.my/dvs/resources/user_1/2023/BPSPV/Perangkaan_2023/Buku_Perangkaan_Ternakan_2022_2023.pdf
- JAKIM. (2020a). Malaysian Halal Management System (MHMS) 2020. *Department of Islamic Development Malaysia*, 49. https://smarthalal.com.my/MHMS_2020.pdf
- JAKIM. (2020b). *Manual prosedur pensijilan halal Malaysia (DOMESTIK) 2020*. 119.
- JAKIM. (2020c). *Manual prosedur pensijilan halal Malaysia (DOMESTIK) 2020*. 119. <http://www.halal.gov.my/v4/index.php?data=bW9kdWxlcY9uZXdzOzs7Ow==&utama=panduan&ids=gpl>
- Jalil, H., & Qamar, T. (2019a). Developing halal compliance critical points (HCCP) for halal slaughtering system. *Journal of Animal and Plant Sciences*, 29(6), 1743–1747.
- Jalil, H., & Qamar, T. (2019b). Developing halal compliance critical points (HCCP) for halal slaughtering system. *Journal of Animal and Plant Sciences*, 29(6), 1743–1747.
- Jay, J. M. (2000). Miscellaneous Food Products. In *Modern Food Microbiology* (pp. 163–175). https://doi.org/10.1007/978-1-4615-4427-2_9
- Jensen, M., & Meckling, W. (2012). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *The Economic Nature of the Firm: A Reader, Third Edition*, 283–303. <https://doi.org/10.1017/CBO9780511817410.023>
- John Elkington. (1997). Cannibals with Forks The Triple Bottom Line of 21st Century Business. In *Capstone*. Capstone Publishing Limited. http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SYSTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI
- Kadir, M. H. A., Rasi, R. Z. R. M., Omar, S. S., & Manap, Z. I. A. (2016). Halal Supply Chain Management Streamlined Practices: Issues and Challenges. *IOP*

- Conference Series: Materials Science and Engineering*, 160(1).
<https://doi.org/10.1088/1757-899X/160/1/012070>
- Kamali, M. H. (2008). *Maqāṣid al-Sharī'ah Made Simple* (A. S. Al Shaikh-Ali & S. Khan, Eds.; 13th ed.). The International Institute of Islamic Thought.
- Kamali, M. H. (2017). Maqasid al-Shariah: The Objective of Islamic Law. *JSTOR*, 38(2), 193–208.
- Kamilaris, A., Fonts, A., & Prenafeta-Boldú, F. X. (2019). The Rise of Blockchain Technology in Agriculture and Food Supply Chains. *Trends in Food Science and Technology*, 91, 640–652. <https://doi.org/10.1016/j.tifs.2019.07.034>
- Kamisah, S., Mokhtar, A., & Hafsah, A. (2018). Halal practices integrity and halal supply chain trust in Malaysian halal food supply chain. *International Food Research Journal*, 25(December), S57–S62.
- Kamus Dewan Bahasa. (2007). *Kamus Dewan Bahasa Edisi Keempat*. 4, 2500.
- Kassa, H., Silverman, G. S., & Baroudi, K. (2010). Effect of a Manager Training and Certification Program on Food Safety and Hygiene in Food Service Operations. *Environmental Health Insights*, 4, 13–20. <https://doi.org/10.4137/EHI.S4717>
- Khan, M. I., Haleem, A., & Khan, S. (2018). Defining Halal Supply Chain Management. *Supply Chain Forum*, 19(2), 122–131. <https://doi.org/10.1080/16258312.2018.1476776>
- Khan, M. I., Khan, S., & Haleem, A. (2019). Analysing barriers towards management of Halal supply chain: a BWM approach. *Journal of Islamic Marketing*. <https://doi.org/10.1108/JIMA-09-2018-0178>
- Kim, H. M., & Laskowski, M. (2018). Toward an Ontology-Driven Blockchain Design for Supply-Chain Provenance. *Intelligent Systems in Accounting, Finance and Management*, 25(1), 18–27. <https://doi.org/10.1002/isaf.1424>
- Kurniawati, D. A., & Cakravastia, A. (2023). A review of halal supply chain research: Sustainability and operations research perspective. *Cleaner Logistics and Supply Chain*, 6(February), 100096. <https://doi.org/10.1016/j.clscn.2023.100096>

- Laldin, M. A., & Furqani, H. (2013). The Foundations of Islamic Finance and the *Maqāṣid Al-Sharī'ah* Requirements. *Journal of Islamic Finance*, 2(1), 31–37. <https://doi.org/10.12816/0001115>
- Lambert, D. M., Stock, J. R., & Ellram, L. M. (1998a). Fundamentals of Logistics Management. In *New York Irwin* (pp. xvii, 892 p.).
- Lambert, D. M., Stock, J. R., & Ellram, L. M. (1998b). Fundamentals of Logistics Management. In *New York Irwin* (pp. xvii, 892 p.).
- Lee, H. Y., Hwang, H. J., & Kim, D. H. (2019). Issues of halal supply chain management: Suggestion for Korean traders. *Journal of Korea Trade*, 23(8), 132–144. <https://doi.org/10.35611/jkt.2019.23.8.132>
- Lee, T.-R., Lin, Y.-S., Kassim, E. S., & Sebastian, S. (2023). Consumer decisions toward halal purchase before and during COVID-19 pandemic: a grey relational analysis approach. *British Food Journal*, 125(9), 3351–3367. <https://doi.org/10.1108/BFJ-10-2022-0926>
- Lever, J., & Miele, M. (2012). The growth of halal meat markets in Europe: An exploration of the supply side theory of religion. *Journal of Rural Studies*, 28(4), 528–537. <https://doi.org/10.1016/j.jrurstud.2012.06.004>
- Liqat, I. A. (2023). *State of the Global Islamic Economy Report*. Dinar Standard. https://www.dinarstandard.com/post/state-of-the-global-islamic-economy-report-2023?utm_source=chatgpt.com
- Lu, D. (2011). *Fundamentals of Supply Chain Management*. Dr. Dawei Lu & Ventus Publishing ApS. <https://doi.org/10.1177/014107689809101016>
- Luber, P. (2009). Cross-contamination versus undercooking of poultry meat or eggs - which risks need to be managed first? *International Journal of Food Microbiology*, 134(1–2), 21–28. <https://doi.org/10.1016/j.ijfoodmicro.2009.02.012>
- Majeed, M. T., & Zanib. (2016). Humanomics Article information : *Humanomics*, 32(1), 19–32.

- Majid, Z. A., Kamarulzaman, N. H., Rahman, A. A., & Suzana, H. (2019). Halal Integrity From Logistics Service Provider Perspective. *International Journal of Supply Chain Management*, 8(5), 1–9.
- Manzouri, M., Nizam Ab Rahman, M., Saibani, N., & Rosmawati Che Mohd Zain, C. (2013). Lean supply chain practices in the Halal food. *International Journal of Lean Six Sigma*, 4(4), 389–408. <https://doi.org/10.1108/IJLSS-10-2012-0011>
- Marzuki, S. Z. S., Yunus, N. K. M., Yazid, Z. N. A., & Ismail, I. R. (2012). The Anatomy of Halal Slaughtering: Issues and Challenges. *Conference Paper, Universiti Teknologi MARA Pahang, August*, 1–11. <file:///C:/Users/user/Downloads/TheAnatomyofHalalSlaughtering9October2012.pdf>
- Mayer, E. A. (2011). Gut feelings: The Emerging Biology of Gut-Brain Communication. *Nature Reviews Neuroscience*, 12(8), 453–466. <https://doi.org/10.1038/nrn3071>
- Mead, G. C., Hudson, W. R., & Hinton, M. H. (1993). Microbiological survey of five poultry processing plants in the uk. *British Poultry Science*, 34(3), 497–503. <https://doi.org/10.1080/00071669308417605>
- Meijboom, F. L. B., Visak, T., & Brom, F. W. A. (2006). From trust to trustworthiness: Why information is not enough in the food sector. *Journal of Agricultural and Environmental Ethics*, 19(5), 427–442. <https://doi.org/10.1007/s10806-006-9000-2>
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative Data Analysis: A Method Sourcebook* (H. Salmon, Ed.; 3rd ed.). SAGE Publications Inc.
- Mohammad, M. F., Abdullah, R., & Rahman, N. A. A. (2020). Halal Knowledge Integrity Model (HaKIM) in intensifying the integrity of the Halal industry. In *Halal Logistics and Supply Chain Management in Southeast Asia* (pp. 204–227). Routledge. <https://doi.org/10.4324/9780429329227-16>
- Mohd Ashraf, A., & Abd Rahman, F. (2018). Halalan Toyyiban Poultry Feed: an Appraisal from the Maqasid Shariah Perspective. *International Journal of Engineering & Technology*, 7(3.21), 306. <https://doi.org/10.14419/ijet.v7i3.21.17178>

- Mohd Irzat Rozaidy, M. R. (2017). The effective enforcement of Halal Certification under government and private sector. *Faculty of Syariah and Law, Universiti Sains Islam Malaysia*, 1–23.
file:///C:/Users/pc/Downloads/THE_EFFECTIVE_ENFORCEMENT_OF_HALAL_CERTI.pdf
- Mohd Yunus, A., Wan Chik, W. M. Y., & Mohamad, M. (2010). The Concept of Halalan Tayyiba and Its Application in Products Marketing : A Case Study at Sabasun HyperRuncit Kuala Terengganu , Malaysia. *International Journal of Business and Social Science*, 1(3), 239–248.
- Mortimore, S., & Wallace, C. (2013). HACCP: A practical approach. In *HACCP: A Practical Approach*. <https://doi.org/10.1007/978-1-4614-5028-3>
- Mughal, M. A. (2020). *Halal Slaughtering and Safety Procedures* (2nd ed.). Punjab Halal Development Agency (PHDA).
- Muhammad Asyraf, A. H., Muhamad Sayuti Hassan, Hasani Mohd Ali, Mohd Zamre Mohd Zahir, & Murjiyanto R. (2023). Meat Cartels and Their Manipulation of Halal Certification in Malaysia. *IIUM Law Journal*, 31(S1), 165–186. <https://doi.org/10.31436/iiumlj.v31is1.879>
- Musaev, M. (2017). The Prohibition of Alcohol in Islam: Religious Imperatives and Practices in Seventeenth- to Nineteenth-Century Dagestan. *State Religion and Church*, 4(1), 4–25. <https://doi.org/10.22394/2311-3448-2017-4-1-4-25>
- Mustapha, M. R., Ahamad, F., Hazahari, N. Y., & Samsudin, N. (2024). Ethical issues in the halal food supply chain: a systematic bibliometric review. *Journal of Islamic Marketing*. <https://doi.org/10.1108/JIMA-07-2023-0210>
- Nafis, M. C. (2019). the Concept of Halal and Thayyib and Its Implementation in Indonesia. *Journal of Halal Product and Research*, 2(1), 1. <https://doi.org/10.20473/jhpr.vol.2-issue.1.1-5>
- Nakyinsige, K., Man, Y. B. C., & Sazili, A. Q. (2012). Halal authenticity issues in meat and meat products. *Meat Science*, 91(3), 207–214. <https://doi.org/10.1016/j.meatsci.2012.02.015>

- Nazri, M., Rahman, A., & Md.Shaarani, S. (2012). Study on the Effectiveness of Halal Certification in Slaughtering House Around Kota Kinabalu , Sabah. *International Conference on Food Science and Nutrition, April*, 895–918.
- Ngah, A. H., Zainuddin, Y., & Thurasamy, R. (2014). Contributing factors of Halal warehouse adoption. *Management and Technology in Knowledge, Service, Tourism and Hospitality, January 2017*, 89–94. <https://doi.org/10.1201/b16700-20>
- Norasekin, A. R. (2016). *Relationship Among Halal Traceability System Adoption, Halal Industry Environmental Factors and Halal Food Supply Chain Performance* [Universiti Putra Malaysia]. <https://www.infodesign.org.br/infodesign/article/view/355%0Ahttp://www.abergo.org.br/revista/index.php/ae/article/view/731%0Ahttp://www.abergo.org.br/revista/index.php/ae/article/view/269%0Ahttp://www.abergo.org.br/revista/index.php/ae/article/view/106>
- Northcutt, J. K., Smith, D. P., Musgrove, M. T., Ingram, K. D., & Hinton, A. (2005). Microbiological Impact of Spray Washing Broiler Carcasses Using Different Chlorine Concentrations and Water Temperatures. *Poultry Science*, 84(10), 1648–1652. <https://doi.org/10.1093/ps/84.10.1648>
- Nurshuhada, S., Aini, N., Hishammfariz, M., Daud, A., & Shamizah, A. (2021). Economic Production of Broiler Industry In Malaysia. *Malaysian Journal of Veterinary Research*, 12(2), 52–60.
- Oakland, J. S. (2021). Continuous improvement – more advanced, including Taguchi and Six Sigma. In *Total Quality Management and Operational Excellence*. <https://doi.org/10.4324/9781315815725-26>
- Obaidullah, M., & Khan, T. (2011). Islamic Microfinance Development: Challenges and Initiatives. In *SSRN Electronic Journal* (Issue 2). <https://doi.org/10.2139/ssrn.1506073>
- Omar, E. N., Jaafar, H. S., & Osman, M. R. (2013). Halalan Toyiyiban Supply Chain of the Food Industry. *Journal of Emerging Economies and Islamic Research*, 1(3), 23. <https://doi.org/10.24191/jeeir.v1i3.9127>

- Omar, Emi Normalina, Jaafar, Harlina Suzana, Osman, Muhammad Rahimi, Nasruddin, & Faisol. (2013). Halalan Toyyiban Supply Chain The New Insights in Sustainable Supply Chain Management. *Iclt 2013*, 52756, 1–9.
- Omar, Wan Marhaini Wan, Shams Rahman, F. J. (2017). *Halal Food Chain Management*. 2030(Mm), 1–18.
- Osman, S., Cheng, K. W., & Wider, W. (2022). Factors Affecting the Halal Cosmetics Purchasing Behaviour in Klang Valley, Malaysia. *FWU Journal of Social Sciences*, 16(4), 102–120. <https://doi.org/10.51709/19951272/Winter2022/8>
- Pew Research Center. (2011). The future of the global Muslim population. Projections for 2010-2030. *Population Space and Place*, 13(1), 1–221.
- Prayuda, D., Arby, S., Adli, I., & Al-Ayubi, S. (2023). Halal Industry: Opportunities and Challenge in the Global Market. *Jurnal Ekonomi Islam*, 14(2), 2579–6453.
- Qardhawi, M. Y. (1993). *Halal dan Haram dalam Islam oleh Syekh Muhammad Yusuf Qardhawi*.
- Quoquab, F., Mohamed Sadom, N. Z., & Mohammad, J. (2019). Driving customer loyalty in the Malaysian fast food industry. *Journal of Islamic Marketing, ahead-of-p*(ahead-of-print). <https://doi.org/10.1108/JIMA-01-2019-0010>
- Quraishi, A., & Kamali, M. H. (2000). Principles of Islamic Jurisprudence. *Journal of Law and Religion*, 15(1/2), 385. <https://doi.org/10.2307/1051529>
- Rahman, M. M., Razimi, M. S. A., Ariffin, A. S., & Hashim, N. (2024). Navigating moral landscape: Islamic ethical choices and sustainability in Halal meat production and consumption. *Discover Sustainability*, 5(1). <https://doi.org/10.1007/s43621-024-00388-y>
- Rahman, M., Shahril, M., Razimi, A., Nasri, M., & Hussain, M. (2021). Supply Chain Management with Halal Critical Control Points and Impact of Halal Slaughtering in Poultry Industry. *3 Rd International Halal Management Conference (3 Rd IHMC 2021)*, 114–117.
- Ramli, M. H., Rosman, A. S., & Ajmain@Jima'ain, M. T. (2020). The Operation of the Halal Assurance System in the Broilers Farming Sector: A Preliminary Study/ Pengoperasian Sistem Pengurusan Jaminan Halal Di Sektor Penternakan Ayam

- Pedaging: Satu Kajian Awal. *Sains Humanika*, 12(3), 67–74.
<https://doi.org/10.11113/sh.v12n3.1718>
- Ramli, M. H., Rosman, A. S., Khan, A., Fadzillah, N. A., Ghazali, M. A., Darawi, A. B. B. S., Saari, Z., Jandra, M., & Jamli, N. A. O. (2020). Halal risk control at the upstream level of the broiler chicken supply chain. *Journal of Critical Reviews*, 7(7), 1052–1057. <https://doi.org/10.31838/jcr.07.07.191>
- Ramli, M. H., Rosman, A. S., Khan, A., Fadzillah, N. A., Hassan, A. M., Darawi, A. B. B. S., Saari, Z., Jandra, M., & Jamli, N. A. O. (2020a). Halal assurance management system in chicken broiler industry. *Journal of Critical Reviews*, 7(7), 1046–1051. <https://doi.org/10.31838/jcr.07.07.190>
- Ramli, M. H., Rosman, A. S., Khan, A., Fadzillah, N. A., Hassan, A. M., Darawi, A. B. B. S., Saari, Z., Jandra, M., & Jamli, N. A. O. (2020b). Halal assurance management system in chicken broiler industry. *Journal of Critical Reviews*, 7(7), 1046–1051. <https://doi.org/10.31838/jcr.07.07.190>
- Ramli, M. H., Rosman, A. S., Khan, A., Fadzillah, N. A., Hassan, A. M., Darawi, A. B. B. S., Saari, Z., Jandra, M., & Jamli, N. A. O. (2020c). Halal assurance management system in chicken broiler industry. *Journal of Critical Reviews*, 7(7), 1046–1051. <https://doi.org/10.31838/jcr.07.07.190>
- Ramli, M. H., Rosman, A. S., Md Sikin, A., Jamaludin, M. A., & Ajmain, M. T. (2020). Halal Assurance at Farm Level in the Poultry Supply Chain. *Journal of Islamic, Social, Economics and Development (JISED)*, 5(31), 1–11.
- Rebezov, M., Khayrullin, M., Assenova, B., Farida, S., Baydan, D., Garipova, L., Savkina, R., & Rodionova, S. (2024). Improving meat quality and safety: innovative strategies. *Potravinarstvo Slovak Journal of Food Sciences*, 18, 523–546. <https://doi.org/10.5219/1972>
- Rejeb, A. (2018). Halal Meat Supply Chain Traceability based on HACCP, Blockchain and Internet of Things. *Acta Technica Jaurinensis*, 11(4), 218–247. <https://doi.org/10.14513/actatechjaur.v11.n4.467>
- Rejeb, A., Keogh, J. G., Rejeb, K., & Dean, K. (2021). Halal Food Supply Chains: A Literature Review of Sustainable Measures and Future Research Directions.

Foods and Raw Materials, 9(1), 106–116. <https://doi.org/10.21603/2308-4057-2021-1-106-116>

- Research and Market. (2022). *Global Halal Food Market Report 2022: A \$3,907.7 Billion*. <https://www.globenewswire.com/news-release/2022/05/03/2434418/28124/en/Global-Halal-Food-Market-Report-2022-A-3-907-7-Billion-Industry-by-2027-Flourishing-e-Commerce-Industry-has-Facilitated-Consumers-with-Easy-Accessibility.html>
- Rezai, G., Mohamed, Z., & Nasir Shamsudin, M. (2012). Non-Muslim consumers' understanding of Halal principles in Malaysia. *Journal of Islamic Marketing*, 3(1), 35–46. <https://doi.org/10.1108/17590831211206572>
- Riaz, M. N., & Chaudry, M. M. (2004). Halal food production. *Food Microbiology*, 21(4), 490. <https://doi.org/10.1016/j.fm.2004.01.005>
- Riaz, M. N., Irshad, F., Riaz, N. M., & Regenstein, J. M. (2021). Pros and cons of different stunning methods from a Halal perspective: A review. *Translational Animal Science*, 5(4). <https://doi.org/10.1093/tas/txab154>
- Riaz, M. N., & Muhammad M. Chaudry. (2004). Halal Food Production. In *CRC Press LLC*. CRC PRESS. <https://doi.org/10.4324/9781315626796-26>
- Rokshana, S. A., & Ida Madieha, A. G. A. (2011). *The Concept Of Halal and Halal Food Certification Process In Malaysia: Issues and Concerns*. 11(2), 10–14. <https://doi.org/10.16194/j.cnki.31-1059/g4.2011.07.016>
- Rokshana Shirin Asa. (2017). Malaysian halal certification: it's religious significance and economic value. *Jurnal Syariah*, 25(1), 137–156.
- Saabiq, S. (1991). *Fiqh-us-Sunnah* (Vol. 1, pp. 1–712). http://dls.teamtil.net/books/islam/fiqh/fiqh-us-sunnah_complete_r3.pdf
- Saberi, S., Kouhizadeh, M., Sarkis, J., & Shen, L. (2019). Blockchain technology and its relationships to sustainable supply chain management. *International Journal of Production Research*, 57(7), 2117–2135. <https://doi.org/10.1080/00207543.2018.1533261>
- Sabow, A. B., Nakyinsige, K., Adeyemi, K. D., Sazili, A. Q., Johnson, C. B., Webster, J., & Farouk, M. M. (2017). High Frequency Pre-Slaughter Electrical Stunning

- in Ruminants and Poultry for Halal Meat Production: A Review. *Livestock Science*, 202, 124–134. <https://doi.org/10.1016/j.livsci.2017.05.021>
- Saifudin, A. M., Zainuddin, N., Elias, E. M., Samsuddin, S. N. F., & Osman, A. A. (2018). Reviewing the contributors towards the performance of the new Islamic supply chain model. *International Journal of Supply Chain Management*, 7(4), 151–157.
- Salama, Y., & Chennaoui, M. (2024). Understanding Microbial Contamination in Meat and Poultry Production. *Journal of Research in Agriculture and Food Sciences*, 0, 1. <https://doi.org/10.5455/jrafs.20240705062923>
- Shah Alam, S., & Mohamed Sayuti, N. (2011). Applying the Theory of Planned Behavior (TPB) in halal food purchasing. *International Journal of Commerce and Management*, 21(1), 8–20. <https://doi.org/10.1108/10569211111111676>
- Shahabuddin, A. S. M., Sukor, M. E. A., & Hashim, N. H. (2020). Product-centric halal business: a critique from an Islamic perspective. *Journal of Islamic Marketing*, 11(6), 1707–1724. <https://doi.org/10.1108/JIMA-06-2019-0129>
- Shahdan, I. A., Regenstein, J. M., Shahabuddin, A. S. M., & Rahman, M. T. (2016a). Developing control points for halal slaughtering of poultry. *Poultry Science*, 95(7), 1680–1692. <https://doi.org/10.3382/ps/pew092>
- Shahdan, I. A., Regenstein, J. M., Shahabuddin, A. S. M., & Rahman, M. T. (2016b). Developing control points for halal slaughtering of poultry. *Poultry Science*, 95(7), 1680–1692. <https://doi.org/10.3382/ps/pew092>
- Sham, R., Rasi, R. Z., Abdamia, N., Mohamed, S., & Thahira Bibi, T. K. M. (2017). Halal Logistics Implementation in Malaysia: A Practical View. *IOP Conference Series: Materials Science and Engineering*, 226(1). <https://doi.org/10.1088/1757-899X/226/1/012040>
- Shimp, T. A., & Sharma, S. (1987). Consumer Ethnocentrism: Construction and Validation of the CETSCALE. *Journal of Marketing Research*, 24(3), 280–289. <http://www.jstor.org/stable/3151638> .
- Sigh, S. (2025). *Halal Food Market Report 2025*. Cognitive Market Research. <https://www.cognitivemarketresearch.com/halal-food-market-report>

- Siti Khalilah Basarud-Din. (2013). Persepsi usahawan industri kecil dan sederhana (Iks) Bumiputera terhadap pensijilan halal Malaysia. *Uum*. http://etd.uum.edu.my/5098/2/s811110_abstract.pdf
- Soon, J. M., Chandia, M., & Regenstein, J. M. (2017a). Halal integrity in the food supply chain. *British Food Journal*, 119(1), 39–51. <https://doi.org/10.1108/BFJ-04-2016-0150>
- Soon, J. M., Chandia, M., & Regenstein, J. Mac. (2017b). Halal integrity in the food supply chain. *British Food Journal*, 119(1), 39–51. <https://doi.org/10.1108/BFJ-04-2016-0150>
- Spence, M. (1973). Job Market Signalling. *Quarterly Journal of Economics*, 87, 355–374. <https://doi.org/10.1016/b978-0-12-214850-7.50025-5>
- Suchman, M. C. (1995). Managing Legitimacy : Strategic and Institutional Approaches. *The Academy of Management Review*, 20(3), 571–610.
- Suhaiza Hanim, M. Z., Zainal Ariffin, A., Nabsiah, A. W., Rosly, O., & Yudi, F. (2010). Recommendations to Strengthen Halal Food Supply Chain for Food Industry in Malaysia. *Journal of Agribusiness Marketing, Special ed*, 91–105.
- Sulaiman, J., Mazlan, F. A., & Jelani, A. H. (2021). Evaluation of halal concept and identification of halal control points (HCP) among workers of 7-Eleven stores in Cyberjaya, Selangor. *International Conference On Syariah & Law 2021*, 2021(April), 167–203. <http://conference.kuis.edu.my/iconsyal/images/eprosiding/2020.pdf>
- Sulaiman, N. S., & Mohammad, N. (2022). Maqasid Shariah in Halal Poultry : A Case of Golden Chicks Abattoir Sdn Bhd. *Proceedings Borneo Islamic International Conference*, 13, 223–229.
- Sulieman, A., Ibrahim, S. M., Abdelgadir, M. A., Moneim, A., & Sulieman, E. (2014). Impact of Halal and Non-halal Slaughtering on the Microbiological Characteristics of Broiler Chicken Meat and Sa... Related papers Influence of Halal and Non-Halal Slaught ering on t he Qualit y Charact erist ics of Broiler Chicken... Impact of Halal and No. *Food and Public Health*, 2014(5), 223–228. <https://doi.org/10.5923/j.fph.20140405.03>

- Supian, K., & Rashid, N. A. (2018). The Role of Supplier, Top Management and Government in Halal Practices Integrity of Malaysian Food Business. *International Journal of Asian Social Science*, 8(8), 549–559. <https://doi.org/10.18488/journal.1.2018.88.549.559>
- Sutherland, J. L. (2007). Logistics from a historical perspective. *Logistics Engineering Handbook*, December 2008, 1-1-1–14. <https://doi.org/10.1201/9781420088571.ch1>
- Talib, M. S. A., Rubin, L., & Zengyi, V. K. (2013). Qualitative Research on Critical Issues In Halal Logistics. *Journal of Emerging Economies and Islamic Research*, 1(2), 1–20. <http://www.jeeir.com/index.php/jeeir/article/view/40/pdf>
- Tashtemirovich, A. O., & Balbaa, M. E. (2024). The Role of Blockchain in Supply Chain Transparency for E-Commerce. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 14542 LNCS(August), 365–376. https://doi.org/10.1007/978-3-031-60994-7_31
- Tieman, M. (2011a). The application of Halal in supply chain management: In-depth interviews. *Journal of Islamic Marketing*, 2(2), 186–195. <https://doi.org/10.1108/17590831111139893>
- Tieman, M. (2011b). The application of Halal in supply chain management: In-depth interviews. *Journal of Islamic Marketing*, 2(2), 186–195. <https://doi.org/10.1108/17590831111139893>
- Tieman, M. (2011c). The application of Halal in supply chain management: in-depth interviews. *Journal of Islamic Marketing*, 2(2), 186–195.
- Tieman, M. (2012). Control of Halal Food Chains. *ICR Journal*, 3(3), 538–542. <https://doi.org/10.52282/icr.v3i3.538>
- Tieman, M. (2015). Halal clusters. *Journal of Islamic Marketing*, 6(1), 2–21. <https://doi.org/10.1108/JIMA-05-2014-0034>
- Tieman, M. (2017). Halal risk management: combining robustness and resilience. *Journal of Islamic Marketing*, 8(3), 461–475. <https://doi.org/10.1108/JIMA-06-2015-0041>

- Tieman, M., & Ghazali, M. C. (2013a). Principles in halal purchasing. *Journal of Islamic Marketing*, 4(3), 281–293. <https://doi.org/10.1108/JIMA-01-2012-0004>
- Tieman, M., & Ghazali, M. C. (2013b). Principles in Halal Purchasing. *Journal of Islamic Marketing*, 4(3), 281–293. <https://doi.org/10.1108/JIMA-01-2012-0004>
- Tieman, M., & Hassan, F. H. (2015). Convergence of food systems: Kosher, Christian and Halal. *British Food Journal*, 117(9), 2313–2327. <https://doi.org/10.1108/BFJ-02-2015-0058>
- Tieman, M., & van Nistelrooy, M. (2014). Perception of Malaysian Food Manufacturers Toward Halal Logistics. *Journal of International Food and Agribusiness Marketing*, 26(3), 218–233. <https://doi.org/10.1080/08974438.2013.833572>
- Treviño, L. K., Weaver, G. R., & Reynolds, S. J. (2006). Behavioral Ethics in Organizations: A Review. *Journal of Management*, 32(6), 951–990. <https://doi.org/10.1177/0149206306294258>
- Usman, I. (2020). Halal supply chain management practice model: A case study in evidence of halal supply chain in Indonesia. *International Journal of Innovation, Creativity and Change*, 11(11), 440–451.
- van der Spiegel, M., van der Fels-Klerx, H. J., Sterrenburg, P., van Ruth, S. M., Scholtens-Toma, I. M. J., & Kok, E. J. (2012). Halal Assurance in Food Supply Chains: Verification of Halal Certificates Using Audits and Laboratory Analysis. *Trends in Food Science and Technology*, 27(2), 109–119. <https://doi.org/10.1016/j.tifs.2012.04.005>
- Voak, A., Fairman, B., & Wahyuni, H. C. (2023). Halal Supply Chain Competencies. *Journal of Resilient Economies (ISSN: 2653-1917)*, 3(2). <https://doi.org/10.25120/jre.3.2.2023.4021>
- Wahida, S., Mohd Nizam, L., Wan Zawiah, W. A., Tuan Zainazor, T. C., & Zaiton, H. (2017). A review on incidences of foodborne diseases and interventions for a better national food safety system in Malaysia. *Malaysian Applied Biology*, 46(3), 1–7.

- Waterland, R. A., & Jirtle, R. L. (2004). Early Nutrition, Epigenetic Changes at Transposons and Imprinted Genes, and Enhanced Susceptibility to Adult Chronic Diseases. *Nutrition*, 20(1), 63–68. <https://doi.org/10.1016/j.nut.2003.09.011>
- WHO. (2006). *Five Keys to Safer Food*. World Health Organization. https://www.who.int/foodsafety/publications/consumer/en/5keys_en.pdf?ua=1
- WHO. (2023). Influenza (Avian and other zoonotic). In *World Health Organization*. [https://www.who.int/news-room/fact-sheets/detail/influenza-\(avian-and-other-zoonotic\)](https://www.who.int/news-room/fact-sheets/detail/influenza-(avian-and-other-zoonotic))
- Wilson, J. A. J., & Liu, J. (2010). Shaping the Halal into a brand? *Journal of Islamic Marketing*, 1(2), 107–123. <https://doi.org/10.1108/17590831011055851>
- Wilson, J. A. J., & Liu, J. (2011). The Challenges of Islamic Branding: Navigating Emotions and Halal. *Journal of Islamic Marketing*, 2(1), 28–42. <https://doi.org/10.1108/17590831111115222>
- Yahya, H., Samicho, Z., Firdaus, A., & Nurul, M. (2016). A Review on Application of Halalan-Toyyiban Risk Management Plan (HTRMP) and Frozen Food Chain during Warehousing Activities for Maintaining Halal , Safety , and Quality. *Journal of Applied Enviromental and Biological Sciences*, 6(11), 96–102.
- Yin, R. K. (2003). *Case Study Research Design and Methods* (pp. 1–180). SAGE Publications.
- Yunan, Y. S. M., Ali, M. H., & Alam, S. S. (2020). Safeguarding halal integrity through halal logistics adoption: A case of food manufacturers. *Institutions and Economies*, 12(3), 18–40.
- Yusoff, F. A. M., Yusof, R. N. R., & Hussin, S. R. (2015). Halal Food Supply Chain Knowledge and Purchase Intention. *International Journal of Economics and Management*, 9(Special Issue), 155–172.
- Zailani, S., Iranmanesh, M., Aziz, A. A., & Kanapathy, K. (2017). Halal logistics opportunities and challenges. *Journal of Islamic Marketing*, 8(1), 127–139. <https://doi.org/10.1108/JIMA-04-2015-0028>

- Zailani, S., Jafarzadeh, S., Iranmanesh, M., Nikbin, D., & Selim, N. I. I. (2018). Halal Logistics Service Quality: Conceptual Model and Empirical Evidence. *British Food Journal*, 120(11), 2599–2614. <https://doi.org/10.1108/BFJ-07-2017-0412>
- Zaina, C. R. C. M., Rahmanb, S. A., Ishanc, Z. Mohd., & Azizd, S. A. (2015). Jurisdiction and Prosecution of Halal Related Matters in Malaysia: Challenges and Prospects. *Procedia - Social and Behavioral Sciences*, 172, 294–300. <https://doi.org/10.1016/j.sbspro.2015.01.367>
- Zainalabidin, F. A., Hassan, F. M., Zin, N. S. M., Azmi, W. N. W., & Ismail, M. I. (2019). Halal System in Meat Industries. *Malaysian Journal of Halal Research*, 2(1), 1–5. <https://doi.org/10.2478/mjhr-2019-0001>
- Zainuddin, N., Saifudin, A. M., Deraman, N., & Osman, A. A. (2020a). The effect of halal traceability system on halal supply chain performance. *International Journal of Supply Chain Management*, 9(1), 490–498.
- Zainuddin, N., Saifudin, A. M., Deraman, N., & Osman, A. A. (2020b). The effect of halal traceability system on halal supply chain performance. *International Journal of Supply Chain Management*, 9(1), 490–498.
- Zainuddin, N., Saifudin, A. M., Deraman, N., & Osman, A. A. (2020c). The effect of halal traceability system on halal supply chain performance. *International Journal of Supply Chain Management*, 9(1), 490–498.
- Zulfakar, M. H., Anuar, M. M., & Talib, M. S. A. (2014a). Conceptual Framework on Halal Food Supply Chain Integrity Enhancement. *Procedia - Social and Behavioral Sciences*, 121, 58–67. <https://doi.org/10.1016/j.sbspro.2014.01.1108>
- Zulfakar, M. H., Anuar, M. M., & Talib, M. S. A. (2014b). Conceptual Framework on Halal Food Supply Chain Integrity Enhancement. *Procedia - Social and Behavioral Sciences*, 121, 58–67. <https://doi.org/10.1016/j.sbspro.2014.01.1108>
- Zulfakar, M. H., Jie, F., & Chan, C. (2012a). Halal Food Supply Chain Integrity: From a Literature Review to a Conceptual Framework. *Proceedings of the 10th ANZAM Operations, Supply Chain and Services Management Symposium*, 61 4, 1–23.

Zulfakar, M. H., Jie, F., & Chan, C. (2012b). Halal Food Supply Chain Integrity: From a Literature Review to a Conceptual Framework. *Proceedings of the 10th ANZAM Operations, Supply Chain and Services Management Symposium*, 61 4, 1–23.



APPENDIX A
INTERVIEW FORM

Name of the Premise: _____

Type of Business: _____

Respondent's Name: _____

Respondent's Position: _____

Years of Experience: _____

Age: _____

Gender: _____

Education: _____

Date: _____

Time: _____

Location: _____

Signature and Official Stamp:

APPENDIX B

PROTOCOL INTERVIEW FOR HALAL EXECUTIVE

General Implementation of Integrity Dimensions

1. Can you describe your company's approach to implementing halal integrity within your supply chain?
2. How does your company ensure that the principles of purity, hygiene, safety, and quality are maintained throughout the supply chain?

Purity Dimension

3. What measures does your company take to ensure the purity of halal products, especially during slaughtering and processing?
4. How do you prevent cross-contamination or the introduction of *najis* (impurities) at different stages of the supply chain?
5. How does the poultry industry uphold the *maqāṣid al-Sharī'ah* principle of preserving religion by ensuring the purity of halal poultry products through proper segregation and contamination prevention practices?

Hygiene Dimension

6. What sanitation practices are in place to maintain cleanliness in your production and packaging processes?
7. How does your company monitor and manage hygiene in transportation and storage?
8. How does maintaining hygiene throughout the halal poultry supply chain align with the *maqāṣid al-Sharī'ah* objective of preserving health, and what mechanisms are in place to ensure cleanliness in processing and transportation?

Safety Dimension

9. How does your company ensure food safety during production and processing?
10. What steps are taken to minimize the risk of contamination or harm from chemicals and other hazards?
11. Can you elaborate on the measures in place to ensure animal welfare during processing?

12. In what ways does the poultry industry contribute to the preservation of life by ensuring the safety of halal poultry products, particularly through compliance with food safety standards and risk management systems?

Quality Dimension

13. How do you ensure consistent quality in halal poultry products, from sourcing to delivery?
14. What role does staff training play in maintaining the quality of halal practices in your company?
15. How do you manage quality control and compliance with halal certification standards?
16. How does the assurance of quality in halal poultry products reflect the *maqāṣid al-Sharī'ah* goal of preserving intellect by providing products that meet consumer expectations and support ethical consumption?

Sustaining Integrity Across Supply Chain Stages

17. What challenges do you face in sustaining these integrity dimensions across various stages of the supply chain?
18. What strategies or systems does your company use to sustain halal integrity over time?

Role of Technology and Innovation

19. Does your company use technology (e.g., blockchain, IoT) to enhance integrity practices? If so, how?
20. What innovations or improvements have been made to sustain halal integrity in recent years?

External Verification and Collaboration

21. How do regular audits and inspections contribute to maintaining halal integrity in your company?
22. How does your company collaborate with suppliers, regulators, and certification bodies to ensure compliance with halal standards?

Continuous Improvement and Future Directions

23. What improvements do you think are necessary to enhance the implementation and sustainability of halal integrity in the poultry supply chain?
24. In your opinion, what is the future of halal integrity in the poultry industry, and how is your company preparing for it?

APPENDIX C

PROTOCOL INTERVIEW FOR HALAL ACADEMICIAN/EXPERTS

General Implementation of Integrity Dimensions

1. Can you describe your company's approach to implementing halal integrity within your supply chain?
2. How does your company ensure that the principles of purity, hygiene, safety, and quality are maintained throughout the supply chain?

Purity Dimension

3. What measures does your company take to ensure the purity of halal products, especially during slaughtering and processing?
4. How do you prevent cross-contamination or the introduction of *najis* (impurities) at different stages of the supply chain?
5. How does the poultry industry uphold the *maqāṣid al-Sharī'ah* principle of preserving religion by ensuring the purity of halal poultry products through proper segregation and contamination prevention practices?

Hygiene Dimension

6. What sanitation practices are in place to maintain cleanliness in your production and packaging processes?
7. How does your company monitor and manage hygiene in transportation and storage?
8. How does maintaining hygiene throughout the halal poultry supply chain align with the *maqāṣid al-Sharī'ah* objective of preserving health, and what mechanisms are in place to ensure cleanliness in processing and transportation?

Safety Dimension

9. How does your company ensure food safety during production and processing?
10. What steps are taken to minimize the risk of contamination or harm from chemicals and other hazards?
11. Can you elaborate on the measures in place to ensure animal welfare during processing?

12. In what ways does the poultry industry contribute to the preservation of life by ensuring the safety of halal poultry products, particularly through compliance with food safety standards and risk management systems?

Quality Dimension

13. How do you ensure consistent quality in halal poultry products, from sourcing to delivery?
14. What role does staff training play in maintaining the quality of halal practices in your company?
15. How do you manage quality control and compliance with halal certification standards?
16. How does the assurance of quality in halal poultry products reflect the *maqāṣid al-Sharī'ah* goal of preserving intellect by providing products that meet consumer expectations and support ethical consumption?

Sustaining Integrity Across Supply Chain Stages

17. What challenges do you face in sustaining these integrity dimensions across various stages of the supply chain?
18. What strategies or systems does your company use to sustain halal integrity over time?

Role of Technology and Innovation

19. Does your company use technology (e.g., blockchain, IoT) to enhance integrity practices? If so, how?
20. What innovations or improvements have been made to sustain halal integrity in recent years?

External Verification and Collaboration

25. How do regular audits and inspections contribute to maintaining halal integrity in your company?
26. How does your company collaborate with suppliers, regulators, and certification bodies to ensure compliance with halal standards?

Continuous Improvement and Future Directions

27. What improvements do you think are necessary to enhance the implementation and sustainability of halal integrity in the poultry supply chain?
28. In your opinion, what is the future of halal integrity in the poultry industry, and how is your company preparing for it?

APPENDIX D

PROTOCOL INTERVIEW FOR HALAL CONSULTANT/AUDITOR

General Implementation of Integrity Dimensions

1. Can you describe your company's approach to implementing halal integrity within your supply chain?
2. How does your company ensure that the principles of purity, hygiene, safety, and quality are maintained throughout the supply chain?

Purity Dimension

3. What measures does your company take to ensure the purity of halal products, especially during slaughtering and processing?
4. How do you prevent cross-contamination or the introduction of *najis* (impurities) at different stages of the supply chain?
5. How does the poultry industry uphold the *maqāṣid al-Sharī'ah* principle of preserving religion by ensuring the purity of halal poultry products through proper segregation and contamination prevention practices?

Hygiene Dimension

6. What sanitation practices are in place to maintain cleanliness in your production and packaging processes?
7. How does your company monitor and manage hygiene in transportation and storage?
8. How does maintaining hygiene throughout the halal poultry supply chain align with the *maqāṣid al-Sharī'ah* objective of preserving health, and what mechanisms are in place to ensure cleanliness in processing and transportation?

Safety Dimension

9. How does your company ensure food safety during production and processing?
10. What steps are taken to minimize the risk of contamination or harm from chemicals and other hazards?
11. Can you elaborate on the measures in place to ensure animal welfare during processing?

12. In what ways does the poultry industry contribute to the preservation of life by ensuring the safety of halal poultry products, particularly through compliance with food safety standards and risk management systems?

Quality Dimension

13. How do you ensure consistent quality in halal poultry products, from sourcing to delivery?
14. What role does staff training play in maintaining the quality of halal practices in your company?
15. How do you manage quality control and compliance with halal certification standards?
16. How does the assurance of quality in halal poultry products reflect the *maqāṣid al-Sharī'ah* goal of preserving intellect by providing products that meet consumer expectations and support ethical consumption?

Sustaining Integrity Across Supply Chain Stages

17. What challenges do you face in sustaining these integrity dimensions across various stages of the supply chain?
18. What strategies or systems does your company use to sustain halal integrity over time?

Role of Technology and Innovation

19. Does your company use technology (e.g., blockchain, IoT) to enhance integrity practices? If so, how?
20. What innovations or improvements have been made to sustain halal integrity in recent years?

External Verification and Collaboration

21. How do regular audits and inspections contribute to maintaining halal integrity in your company?
22. How does your company collaborate with suppliers, regulators, and certification bodies to ensure compliance with halal standards?

Continuous Improvement and Future Directions

23. What improvements do you think are necessary to enhance the implementation and sustainability of halal integrity in the poultry supply chain?
24. In your opinion, what is the future of halal integrity in the poultry industry, and how is your company preparing for it?

LIST OF PUBLICATIONS

1. Abdul Lateb, N., & Jaswir, I., (2022): Upholding *Maqāṣid al-Sharī'ah* in The Malaysian Halal Poultry Supply Chain. Y. Hashim & A. Ahmad (Eds), Al-Basirah: An Insight into Halal Business and Lifestyle (pp 58-61). Revon Media.
2. Abdul Lateb, N., Jaswir, I., & Kartika, B. (2024). Bibliometric Analysis of Opportunities in the Halal Supply Chain: Mapping Trends, Innovations and Industry Prospects. *Journal of Islamic, Social, Economics and Development (JISED)*, 9(66), 76–96. <https://doi.org/10.55573/JISED.096607>
3. Abdul Lateb, N., Jaswir, I., & Kartika, B. (2025). *Assessing Purity in the Halal Poultry Supply Chain: A Case Study of Malaysian Poultry Industries*. 6798, 1359–1369.
4. Al-daihani, M., Dirie, K. A., Muneem, A., Lateb, N. A., & Bouteraa, M. (2025). Islamic Social Finance and its Potential in Addressing Natural Disaster Emergencies and Advancing Sustainable Development Goals: A Proposed Model. *International Journal of Ethics and System*. <https://doi.org/10.1108/IJOES-05-2024-0138>