

DEVELOPING AND VALIDATING HALAL  
COMPLIANCE RATING AS A PERFORMANCE  
APPRAISAL TOOL FOR HALAL-CERTIFIED  
RESTAURANTS IN MALAYSIA

BY

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## **ABSTRACT**

The proliferation of halal certified dining options has resulted in increased competition among restaurants. Consumers now have more choices than ever before. However, there is no rating system in place to help restaurants differentiate their halal compliance performance from competitors while also assisting consumers in selecting the best halal restaurant. Moreover, some recent non-compliance incidents have shaken consumers' confidence in JAKIM. To address this problem and research gap, the present study aims to develop and validate the model of best practice of Halal Compliance Rating (HCR) as a performance appraisal tool for halal-certified restaurants in Malaysia. This objective has been achieved in four phases of the research. Firstly, ten HCR components have been identified from an extensive review of the literature. Simultaneously, the Analytic Hierarchy Process (AHP) method was found to be the most suitable method of ranking and rating. In this regard, the first phase of the research also identifies a rating scale appropriate for the language representation of HCR scores. Phase-II of the research measures the weights of the selected HCR components and the selected rating categories by applying the pairwise comparison method of the AHP, involving 20 experts from different organisations. Phase-III applies the AHP methodology to rank and rate the halal-certified restaurants in Malaysia. For this, data were collected from a total of 320 restaurants across Malaysia using a self-administered questionnaire. Majority of the respondents (74.38%) demonstrated a "Good" (50% to <70% halal compliant) rating of HCR. None of the restaurants was found to perform "Poor" (less than 30% halal compliant) HCR. The ten selected HCR components form the model of best practice of HCR (BPHCR) in this research. The final phase validates the model by applying structural equation modelling (SEM) methodology through the assessment of both measurement and structural models. The analysis established the reliability, validity, and goodness of fit of the proposed model. Additionally, out of thirteen hypothesis eleven hypothesis were accepted. The present research is significant being the first of its kind to measure and rate the halal compliance practice of restaurants. The proposed HCR tool can be adapted to any other field of the halal industry. Additionally, this can be very effective tool for halal auditors to rank and rate the halal certified restaurants and appraise their halal compliance performance. The proposed HCR tool can also be adapted to other field of the halal industry.

## ملخص البحث

ينقصنا في الوقت الحالي وجود طريقة موحدة لتقييم التزام المطاعم بمعايير الحلال في صناعة الأغذية والمشروبات الحلال. وفي الوقت نفسه ، يستمر عدد المطاعم الحاصلة على شهادة الحلال في الارتفاع. فقد أدى انتشار خيارات تناول الطعام الحلال إلى زيادة التنافس بين المطاعم. ما نلاحظه في وقتنا الحالي بأنه أصبح لدى المستهلكين خيارات عديدة أكثر من أي وقت سابق. ومع ذلك ، لا يوجد نظام تصنيف لمساعدة أصحاب المطاعم على التمييز بين أداء الامتثال الحلال الخاص بهم من المنافسين، مع مساعدة المستهلكين في اختيار أفضل مطعم حلال. علاوة على ذلك ، أدت بعض حوادث عدم الامتثال الأخيرة إلى زعزعة ثقة المستهلكين في دائرة التنمية الإسلامية بماليزيا (JAKIM). لمعالجة هذه المشكلة والفجوة البحثية ، تهدف الدراسة الحالية إلى تطوير والتحقق من صحة نموذج أفضل الممارسات لتقييم الامتثال الحلال (HCR) كأداة لتقييم الأداء للمطاعم الحلال المعتمدة في ماليزيا. وقد تحقق هذا الهدف في أربع مراحل من البحث. أولاً، تم تحديد عشرة مكونات لأفضل الممارسات لتصنيف الامتثال لمنتجات الحلال من مراجعة شاملة للدراسات السابقة. في الوقت نفسه، تم العثور على طريقة عملية التسلسل الهرمي التحليلي (AHP) لتكون الطريقة الأنسب للترتيب والتصنيف. في هذا الصدد، تحدد المرحلة الأولى من البحث أيضاً مقياس تصنيف مناسب للتمثيل اللغوي لدرجات لأفضل الممارسات لتصنيف الامتثال لمنتجات الحلال. تقيس المرحلة الثانية من البحث أوزان مكونات تقييم الامتثال الحلال المختارة وفئات التصنيف المحددة من خلال تطبيق طريقة المقارنة الزوجية لبرنامج التسلسل الهرمي التحليلي، بمشاركة 20 خبيراً من مختلف المنظمات. تطبق المرحلة الثالثة منهجية التسلسل الهرمي التحليلي لتصنيف وتقييم المطاعم الحلال المعتمدة في ماليزيا. ولهذا، تم جمع البيانات من إجمالي 320 مطعمًا عبر ماليزيا باستخدام استبيان تم إجراؤه ذاتياً. أظهر غالبية المشاركين (74.38٪) تصنيف "جيد" (50٪ إلى >70٪ متوافق مع الحلال) من تقييم الامتثال الحلال. أعطى غالبية المشاركين (74.38٪) منهم تصنيف "جيد" (50٪ إلى >70٪ متوافق مع الحلال) من تقييم الامتثال الحلال. لم يتم العثور على أي من المطاعم يؤدي لأداء تقييم الامتثال الحلال "ضعيف" (أقل من 30٪ متوافق مع الحلال). تشكل مكونات تقييم الامتثال الحلال العشرة المختارة نموذجاً من أفضل الممارسات لتقييم الامتثال الحلال (BPHCR) في هذا البحث. تتحقق المرحلة النهائية من صحة النموذج من خلال تطبيق منهجية نمذجة المعادلات الهيكلية (SEM) من خلال تقييم كل من النماذج الهيكلية والقياسية. يعد البحث الحالي هو الأول من نوعه لقياس وتقييم ممارسة الامتثال الحلال في المطاعم. يمكن اعتماد أداة تقييم الامتثال الحلال المقترحة مع أي مجال آخر من مجالات منتجات الحلال. بالإضافة إلى ذلك، يمكن أن يكون هذا أداة فعالة للغاية لمدقي الحلال لتصنيف وتقييم المطاعم الحلال المعتمدة وتقييم أداء الامتثال الحلال.

## ABSTRAK

Lambakan pelbagai pilihan makanan halal telah menyebabkan peningkatan persaingan dalam kalangan pengusaha restoran. Hal ini kerana, para pengguna masa-kini mempunyai lebih banyak pilihan daripada sebelumnya. Walau bagaimanapun, tiada sistem penilaian yang dibangunkan untuk membantu pengusaha restoran membezakan prestasi pematuhan halal mereka daripada pesaing-pesaing lain lebih-lebih lagi membantu pengguna memilih restoran halal terbaik. Tambahan pula, insiden-insiden yang tidak mematuhi piawaian halal baru-baru ini telah merosakkan kepercayaan pengguna terhadap JAKIM. Untuk membincangkan isu ini dan mengisi kelompongan penyelidikan, satu kajian telah dibangunkan untuk mengesahkan model amalan terbaik Penilaian Kepatuhan Halal (HCR) sebagai alat penilaian prestasi untuk restoran halal di Malaysia. Objektif kajian telah dicapai berdasarkan empat fasa penyelidikan. Pertama, sepuluh komponen HCR telah dikenal pasti daripada hasil tinjauan literatur yang meluas. Pada masa yang sama, kaedah Analisis Proses Hierarki (AHP) telah ditemui sebagai kaedah yang paling sesuai untuk mengenalpasti kedudukan dan tahap penarafan. Malah, fasa pertama penyelidikan juga boleh mengenal pasti skala penilaian yang sesuai untuk mewakili bahasa skor HCR. Fasa II penyelidikan mengukur berat komponen HCR yang dipilih dan kategori penilaian yang dipilih dengan menggunakan kaedah perbandingan pasangan AHP, yang melibatkan 20 orang pakar daripada organisasi yang berbeza. Fasa-III menggunakan kaedah AHP untuk menilai dan menilai restoran yang dipersijilkan halal di Malaysia. Untuk mencapai objektif ini, data dikumpulkan daripada 320 restoran di seluruh Malaysia menggunakan set soalan yang dikendalikan sendiri. Kebanyakan responden (74.38%) menunjukkan penilaian "Bagus" (50% hingga <70% halal mematuhi) HCR. Malah, tiada mana-mana restoran yang dinilai sebagai "lemah" (kurang daripada 30% halal mematuhi) HCR. Sepuluh komponen HCR yang dipilih membentuk model amalan terbaik HCR (BPHCR) dalam penyelidikan ini. Fasa akhir dilaksanakan untuk mengesahkan model dengan menggunakan kaedah pemodelan persamaan struktural (SEM) melalui penilaian kedua-dua model pengukuran dan struktural. Analisis telah berjaya mengesahkan kebolehpercayaan, validiti, dan kesesuaian model yang telah dicadangkan. Selain itu, daripada tiga belas hipotesis, sebelas hypothesis telah diterima. Hasil penyelidikan ini merupakan yang pertama pernah dihasilkan untuk mengukur dan menilai amalan pematuhan halal restoran. Komponen HCR yang diusulkan ini boleh juga disesuaikan dengan mana-mana bidang lain dalam industri halal selain boleh menjadi komponen yang sangat berkesan bagi pengaudit halal untuk menilai restoran yang disijilkan halal dan menganggarkan prestasi pematuhan halal mereka. Alat HCR yang diusulkan ini juga boleh disesuaikan dengan bidang lain dalam kepelbagaian industri halal.

## APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of PhD in Halal Industry

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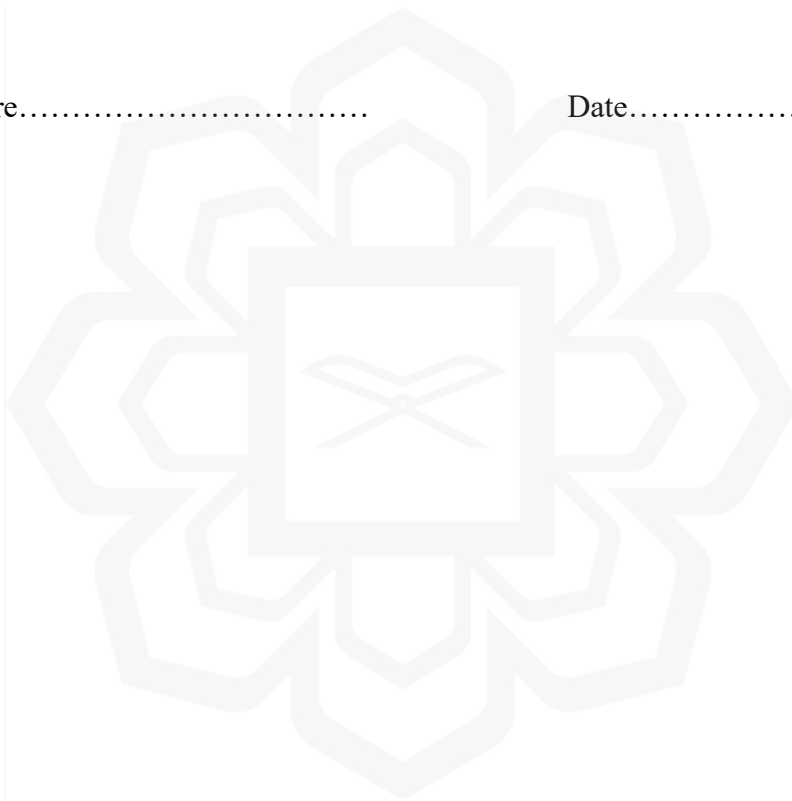
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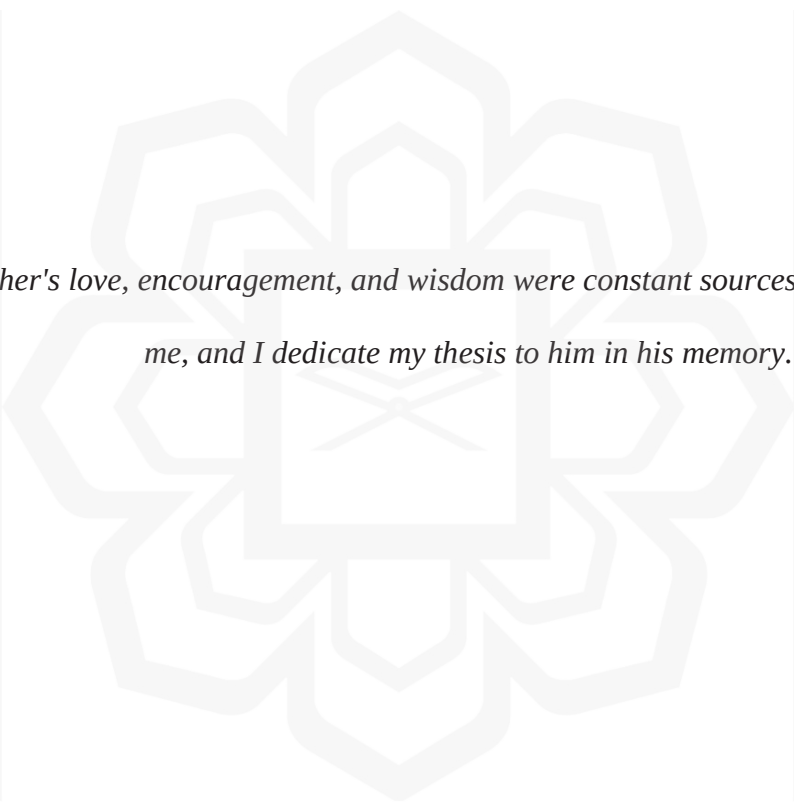
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*My father's love, encouragement, and wisdom were constant sources of motivation for me, and I dedicate my thesis to him in his memory.*

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## TABLE OF CONTENTS

|                                                                                   |           |
|-----------------------------------------------------------------------------------|-----------|
| Abstract .....                                                                    | II        |
| Abstrak .....                                                                     | IV        |
| Approval Page.....                                                                | V         |
| Declaration .....                                                                 | VIII      |
| Acknowledgements.....                                                             | XIII      |
| List of Tables .....                                                              | XIX       |
| List of Figures .....                                                             | XXII      |
| List of Symbols.....                                                              | XXIV      |
| Abbreviations .....                                                               | XXIV      |
| <b>CHAPTER-1: INTRODUCTION .....</b>                                              | <b>1</b>  |
| 1.1. Chapter Introduction .....                                                   | 1         |
| 1.2. Background .....                                                             | 1         |
| 1.3. Problem Statement .....                                                      | 11        |
| 1.4. Research Questions .....                                                     | 14        |
| 1.5. Objectives Of The Research.....                                              | 14        |
| 1.5.1. General Objective .....                                                    | 15        |
| 1.5.2. Specific Objectives .....                                                  | 15        |
| 1.6. Research Hypotheses .....                                                    | 15        |
| 1.7. Significance Of The Study .....                                              | 16        |
| 1.8. Scope Of The Study .....                                                     | 17        |
| 1.9. Chapter Outlines Of The Research .....                                       | 19        |
| 1.10 Definition Of Terms.....                                                     | 23        |
| <b>CHAPTER 2: LITERATURE REVIEW .....</b>                                         | <b>27</b> |
| 2.1. Introduction .....                                                           | 27        |
| 2.2. Definition of Halal .....                                                    | 27        |
| 2.3. Halal industry .....                                                         | 29        |
| 2.3.1. Halal food industry .....                                                  | 30        |
| 2.3.2. Halal restaurants .....                                                    | 31        |
| 2.4. Micro, Small and Medium Enterprises (MSMEs) .....                            | 33        |
| 2.5. Measuring components of halal compliance rating (HCR).....                   | 36        |
| 2.5.1. Malaysian Standard, MS 1500:2019 .....                                     | 37        |
| 2.5.2. Malaysian Standard MS2610:2015 .....                                       | 37        |
| 2.5.3. Food Hygiene Regulation 2009 .....                                         | 39        |
| 2.5.4. Crescent Muslim Friendly Hotel Rating.....                                 | 40        |
| 2.5.5. Malaysian Halal Management System (MHMS) .....                             | 40        |
| 2.5.6. Clean, Safe, and Healthy (BeSS) certification Malaysia.....                | 42        |
| 2.5.7. ISO 22000 Food Safety Management System (FSMS).....                        | 43        |
| 2.5.8. Existing research works.....                                               | 43        |
| 2.5.9. Identified components of HCR.....                                          | 47        |
| 2.6. Performance Appraisal and Existing Compliance Rating Systems .....           | 50        |
| 2.6.1. Crescent Muslim Friendly Hotel Rating System.....                          | 52        |
| 2.6.2. Malaysia Standard for Muslim-friendly hotel rating (MS<br>2610:2015) ..... | 52        |

|                                                                                        |            |
|----------------------------------------------------------------------------------------|------------|
| 2.6.3. Global Islamic Economy Indicator (GIEI) score.....                              | 53         |
| 2.6.4. Online movie rating system.....                                                 | 53         |
| 2.6.5. Compliance rating tools in other industries.....                                | 54         |
| 2.7. Ranking and Rating Methodology .....                                              | 56         |
| 2.7.1. Analytic Hierarchy Process (AHP).....                                           | 57         |
| 2.8. Linguistic expression of different ratings .....                                  | 60         |
| 2.8.1. Restaurant hygiene rating system in Malaysia .....                              | 62         |
| 2.8.2. Malaysia Halal Management System (MHMS) .....                                   | 63         |
| 2.8.3. Restaurant ratings globally .....                                               | 63         |
| 2.8.4. Muslim friendly hotel rating system globally.....                               | 65         |
| 2.8.5. Leadership in Energy and Environmental Design (LEED) .....                      | 66         |
| 2.9. Business performance .....                                                        | 66         |
| 2.9.1. Financial performance .....                                                     | 68         |
| 2.9.2. Non-financial performance:.....                                                 | 71         |
| 2.10. Conceptual Model .....                                                           | 73         |
| 2.11. Chapter Summary.....                                                             | 75         |
| <b>CHAPTER-3: METHODOLOGY .....</b>                                                    | <b>76</b>  |
| 3.1. Introduction .....                                                                | 76         |
| 3.2. Philosophical Assumption.....                                                     | 77         |
| 3.3. Research strategy and design .....                                                | 79         |
| 3.4. Research Phases and Methods .....                                                 | 81         |
| 3.4.1. Phase-I: Selection of HCR components, rating scale, and rating methodology..... | 81         |
| 3.4.2. Phase-II: Measuring weights of HCR components and their Ratings.....            | 87         |
| 3.4.3. Phase-III: Developing research instrument and survey .....                      | 93         |
| 3.4.4. Phase-IV: Application and validation of HCR model.....                          | 107        |
| 3.5. Ethical consideration of the research .....                                       | 114        |
| 3.6. Chapter Summary.....                                                              | 114        |
| <b>CHAPTER 4: HALAL COMPLIANCE RATING (HCR) TOOL .....</b>                             | <b>116</b> |
| 4.1. Chapter Introduction .....                                                        | 116        |
| 4.2. Stage-1: Constructing hierarchy.....                                              | 116        |
| 4.2.1. Selecting HCR components.....                                                   | 117        |
| 4.2.3. Hierarchy construct.....                                                        | 118        |
| 4.3. Stage-2: Measuring weights of HCR components .....                                | 118        |
| 4.3.1. Step 1: Pairwise comparison matrix .....                                        | 119        |
| 4.3.2. Step 2: Normalised pair-wise matrix .....                                       | 120        |
| 4.3.3. Step 3: Consistency ratio (CR) .....                                            | 122        |
| 4.3.4. Discussion on Measured Weights.....                                             | 124        |
| 4.4. Stage-3: Ratings and their respective weights .....                               | 126        |
| 4.4.1. Local weights of ratings .....                                                  | 128        |
| 4.4.2. Global weights of ratings.....                                                  | 129        |
| 4.5. Overall HCR score and ranking .....                                               | 131        |
| 4.5.1. Ranking and Linguistic ratings of overall HCR scores .....                      | 133        |
| 4.5.2 Discussion on Ranking and Rating Halal-Certified Restaurants. ....               | 134        |
| 4.6. Chapter summary .....                                                             | 136        |

|                                                               |            |
|---------------------------------------------------------------|------------|
| <b>CHAPTER 5: FINDINGS AND DISCUSSION .....</b>               | <b>138</b> |
| 5.1. Chapter Introduction .....                               | 138        |
| 5.2 Background of Respondents .....                           | 138        |
| 5.2.1. State .....                                            | 139        |
| 5.2.2. Gender and Religion .....                              | 140        |
| 5.2.3. Education .....                                        | 140        |
| 5.2.4. Business profile (Annual sales and employee size)..... | 141        |
| 5.2.5. Summary and discussion on background findings .....    | 142        |
| 5.3 Halal Compliance Practices Under 10 HCR Components.....   | 144        |
| 5.3.1. Knowledge on Halal and Toyib (KNW).....                | 144        |
| 5.3.2. Management Responsibilities (MGT) .....                | 146        |
| 5.3.3. Premise, Location, and Design (PLD).....               | 150        |
| 5.3.4. Hygiene and food safety (HFS) .....                    | 153        |
| 5.3.5. Human resources and culture (HRC).....                 | 156        |
| 5.3.6. Branding, packaging, and labelling (BPL) .....         | 158        |
| 5.3.7. Image and level of customer satisfaction (ICS).....    | 161        |
| 5.3.8. Legal requirements (LR) .....                          | 163        |
| 5.3.9. Green practice and sustainability (GPS).....           | 165        |
| 5.3.10. Halal supply chain (HSC).....                         | 167        |
| 5.3.11. Descriptive summary of ten (10) HCR components.....   | 170        |
| 5.4 Halal Compliance Rating (HCR) Scores.....                 | 171        |
| 5.5 Business Performance Of Halal-Certified Restaurants ..... | 174        |
| 5.5.1. Financial performance .....                            | 174        |
| 5.5.2. Non-financial performance .....                        | 177        |
| 5.5.3. Descriptive summary of business performance (BP) ..... | 179        |
| 5.6 Validating the BPHCR model.....                           | 180        |
| 5.6.1 Assessment of Measurement Model.....                    | 182        |
| 5.6.2 Construct validity .....                                | 191        |
| 5.6.3 Validating higher order construct (HOC).....            | 195        |
| 5.7 Assessment of Structural Model .....                      | 199        |
| 5.7.1 Collinearity test.....                                  | 200        |
| 5.7.2 Path Coefficient.....                                   | 201        |
| 5.7.3 Effect Size ( $F^2$ ) .....                             | 204        |
| 5.7.4 Analysis of Model fit .....                             | 205        |
| 5.7.5 Hypothesis testing .....                                | 208        |
| 5.8 Chapter Summary.....                                      | 223        |
| <b>CHAPTER 6: CONCLUSION AND RECOMMENDATIONS .....</b>        | <b>225</b> |
| 6.1. Chapter Introduction .....                               | 225        |
| 6.2. Research Summary.....                                    | 225        |
| 6.3. Conclusion .....                                         | 227        |
| 6.4. Limitations Of Research .....                            | 230        |
| 6.5. Recommendations .....                                    | 232        |
| 6.5.1 Policy Recommendations.....                             | 232        |
| 6.5.2 Future Research.....                                    | 234        |
| <b>REFERENCES.....</b>                                        | <b>236</b> |
| <b>APPENDIX-I: RESEARCH QUESTIONNAIRE (ENGLISH) .....</b>     | <b>273</b> |



|                                                                      |            |
|----------------------------------------------------------------------|------------|
| <b>APPENDIX II: RESEARCH QUESTIONNAIRE (MALAY VERSION) .....</b>     | <b>283</b> |
| <b>APPENDIX III: LIST OF EXPERTS PARTICIPATED IN AHP SURVEY ....</b> | <b>298</b> |
| <b>APPENDIX IV: SURVEY APPROVAL LETTER .....</b>                     | <b>300</b> |
| <b>APPENDIX V: AHP QUESTIONNAIRE (MS EXCEL TOOL) .....</b>           | <b>301</b> |
| <b>INDEX .....</b>                                                   | <b>302</b> |



## LIST OF TABLES

|            |                                                                           |    |
|------------|---------------------------------------------------------------------------|----|
| Table 2.1  | Definition of Halal Where the Word ‘Halal’ Has Been Adapted as An Acronym | 28 |
| Table 2.2  | Definition of SMEs in Malaysia                                            | 34 |
| Table 2.3  | MHMS 2020 Grading Criteria                                                | 41 |
| Table 2.4  | Identifying Components of Halal Compliance from Previous Relevant Studies | 44 |
| Table 2.5  | Selected Best HCR Components of Best Halal Practice and Research Code     | 47 |
| Table 2.6  | BREEAM Weighting for The Different Environmental Section                  | 54 |
| Table 2.7  | BREEAM Score and Rating Calculation Example                               | 55 |
| Table 2.8  | Application of AHP Method In Previous Research Works                      | 58 |
| Table 2.9  | Examples of Linguistic Expression of The Numerical Rating Scale           | 61 |
| Table 2.10 | Halal Compliance Grading Criteria: MHMS 2020                              | 63 |
| Table 2.11 | Linguistic Expression of Different Restaurant Rating Systems Globally     | 64 |
| Table 2.12 | Muslim Friendly Tourism (MFT) Standards Using Star Rating System          | 65 |
| Table 3.1  | Selected HCR Components and Their Research Codes                          | 82 |
| Table 3.2  | Sample Size in The Application of AHP By Recent Studies                   | 83 |
| Table 3.3  | Saaty Scale of Relative Importance                                        | 86 |
| Table 3.4  | Ratings of HCR Components                                                 | 87 |
| Table 3.5  | AHP Pairwise Comparison Matrix for HCR Components (Participant-1)         | 89 |
| Table 3.6  | AHP Pairwise Comparison Matrix for Ratings (Participant-1)                | 91 |
| Table 3.7  | Random Index (RI) Table                                                   | 93 |
| Table 3.8  | HCR Components and Measuring Scale                                        | 95 |
| Table 3.9  | Measuring Financial Performance                                           | 97 |
| Table 3.10 | Measuring Non-Financial Performance                                       | 97 |

|            |                                                                                                          |     |
|------------|----------------------------------------------------------------------------------------------------------|-----|
| Table 3.11 | Questionnaire Design                                                                                     | 99  |
| Table 3.12 | Population of the Study                                                                                  | 102 |
| Table 4.1  | AHP Pairwise Comparison Matrix                                                                           | 120 |
| Table 4.2  | Normalised Pair-Wise Matrix and Components' Weights                                                      | 121 |
| Table 4.3  | Rounded Weights of HCR Components                                                                        | 121 |
| Table 4.4  | Calculating $\lambda_{\max}$                                                                             | 123 |
| Table 4.5  | Random Index (RI) Table                                                                                  | 124 |
| Table 4.6  | Linguistic Ratings of HCR Score                                                                          | 127 |
| Table 4.7  | PCM And Local Weights of Ratings                                                                         | 129 |
| Table 4.8  | Global Weights of Ratings                                                                                | 130 |
| Table 4.9  | Numerical Equivalents of Overall HCR Score for Halal Certified Restaurants (Example: Restaurant-X)       | 132 |
| Table 4.10 | Ranking and Linguistic Ratings of Overall HCR Scores Achieved by Halal-Certified Restaurants in Malaysia | 133 |
| Table 5.1  | Background Statistics of Respondents                                                                     | 143 |
| Table 5.2  | Responses Under HCR Component-1: Knowledge on Halal and <i>Toyyib</i> (KNW)                              | 145 |
| Table 5.3  | Responses Under HCR Component-2: Management Responsibilities (MGT)                                       | 148 |
| Table 5.4  | Responses Under HCR Component-3: Premises, Location and Design (PLD)                                     | 151 |
| Table 5.5  | Responses Under HCR Component-4: Hygiene and Food Safety (HFS)                                           | 154 |
| Table 5.6  | Responses Under HCR Component-5: Human Resources and Culture (HRC)                                       | 157 |
| Table 5.7  | Responses Under HCR Component-6: Branding, Packaging and Labelling (BPL)                                 | 160 |
| Table 5.8  | Responses Under HCR Component-7: Image and Level of Customer Satisfaction (ICS)                          | 162 |
| Table 5.9  | Responses Under HCR Component-8: Legal Requirements (LR)                                                 | 164 |

|            |                                                                           |     |
|------------|---------------------------------------------------------------------------|-----|
| Table 5.10 | Responses Under HCR Component-9: Green Practice and Sustainability (GPS)  | 166 |
| Table 5.11 | Responses Under HCR Component-10: Halal Supply Chain (HSC)                | 169 |
| Table 5.12 | Descriptive Summary of HCR Components                                     | 171 |
| Table 5.13 | Ranking, Rating and HCR Scores of Halal-Certified Restaurants in Malaysia | 172 |
| Table 5.14 | Descriptive Statistics of Linguistic Ratings of HCR Scores                | 173 |
| Table 5.15 | Financial Performance                                                     | 175 |
| Table 5.16 | Non-Financial Performance                                                 | 178 |
| Table 5.17 | Descriptive Summary of Business Performance                               | 180 |
| Table 5.18 | Variables And Analysis Codes                                              | 180 |
| Table 5.19 | Model Components and Indicators                                           | 183 |
| Table 5.20 | Outer Loadings                                                            | 185 |
| Table 5.21 | Collinearity Statistics (VIF)                                             | 189 |
| Table 5.22 | Reliability statistics (Cronbach's Alpha and CR)                          | 191 |
| Table 5.23 | Construct Convergent Validity: Average Variance Extracted (AVE)           | 192 |
| Table 5.24 | Fornell And Larcker Criterion                                             | 194 |
| Table 5.25 | Heterotrait-Monotrait (HTMT) Ratio (Lower Order Construct)                | 195 |
| Table 5.26 | HOC Outer Loadings and VIF                                                | 196 |
| Table 5.27 | Reliability and Validity Statistics At HOC                                | 197 |
| Table 5.28 | Heterotrait-Monotrait (HTMT) Ratio At HOC                                 | 199 |
| Table 5.29 | Inner VIF Values                                                          | 201 |
| Table 5.30 | Path Coefficient Statistic                                                | 203 |
| Table 5.31 | Effect Size ( $F^2$ ) Of the Constructs                                   | 205 |
| Table 5.32 | Model Fit Statistics                                                      | 208 |
| Table 5.33 | Hypothesis Testing                                                        | 212 |

## LIST OF FIGURES

|            |                                                                                                          |     |
|------------|----------------------------------------------------------------------------------------------------------|-----|
| Figure 1.1 | Chapter Outline of the thesis                                                                            | 22  |
| Figure 2.1 | Global halal industry sectors: Muslim spendings                                                          | 30  |
| Figure 2.2 | Halal-certified food premises and hotel and resort across different states of Malaysia                   | 32  |
| Figure 2.3 | Contribution of MSMEs to the economy of Malaysia                                                         | 35  |
| Figure 2.4 | Halal Certification Statistics in Malaysia                                                               | 36  |
| Figure 2.5 | Three Levels of AHP (Saaty, 2001)                                                                        | 57  |
| Figure 2.6 | Conceptual model of best practice of HCR (BPHCR) and research framework                                  | 74  |
| Figure 3.1 | Outline of Chapter-3: Methodology                                                                        | 76  |
| Figure 3.2 | Research strategy flowchart                                                                              | 81  |
| Figure 3.3 | AHP Hierarchy construct                                                                                  | 85  |
| Figure 3.4 | Snapshot excel interface of prioritising HCR components (participant 1)                                  | 88  |
| Figure 3.5 | Snapshot excel interface of prioritising rating categories (participant 1)                               | 90  |
| Figure 3.6 | Percentage (%) of total halal-certified restaurants and/or food premises in different states of Malaysia | 103 |
| Figure 3.7 | Map of Malaysia showing the prime location of the survey                                                 | 104 |
| Figure 3.8 | Primary data analysis flowchart                                                                          | 108 |
| Figure 4.1 | Experts' opinion on the selected HCR components                                                          | 117 |
| Figure 4.2 | Hierarchic construct of HCR components and alternatives                                                  | 118 |
| Figure 4.3 | Tree map showing calculated weights of 10 HCR components                                                 | 122 |
| Figure 4.4 | Snapshot of PCM by the experts                                                                           | 128 |
| Figure 5.1 | Business locations of respondents                                                                        | 139 |
| Figure 5.2 | Gender and Religion of respondents                                                                       | 140 |
| Figure 5.3 | Education level of respondents                                                                           | 141 |
| Figure 5.4 | Business profile of respondents                                                                          | 142 |

|            |                                                                                               |     |
|------------|-----------------------------------------------------------------------------------------------|-----|
| Figure 5.5 | Distribution of different ratings of HCR scores among halal-certified restaurants in Malaysia | 174 |
| Figure 6.1 | Measurement model                                                                             | 184 |
| Figure 6.2 | Structural model of the research                                                              | 200 |
| Figure 6.3 | Research structural model showing $\beta$ values and $R^2$ values                             | 210 |
| Figure 6.4 | Research structural model showing T-statistics                                                | 211 |



## LIST OF SYMBOLS

$F^2$  = Effect size

$\beta$  = Path Coefficient

$\lambda$  = Lamda

$Q^2$  = Predictive relevance

$R^2$  = Coefficient of determination

$\Sigma$  = Summation

## ABBREVIATIONS

AHP = Analytic Hierarchy Process

AVE = Average Variance Extracted

BeSS = Clean, Safe, and Healthy

BP = Business performance

BPHCR = Best Practice of HCR

BPL = Branding, packaging, and labelling

BREEAM = Building Research Establishment Environmental Assessment Method

CAGR = Cumulative Average Growth Rate

CI = Consistency Index

COMCEC = Commercial Cooperation of the Organization of Islamic Coperation

CR = Composite Reliability

DSM = Department of Standards Malaysia

EFQM = European Foundation for Quality Management

F&B = Food and Beverage

FHR = Food Hygiene Regulations

FP = Financial performance

FSMS = Food Safety Management System

GHP = Good Hygiene Practice

GIE = Global Islamic Economy

GIEI = Global Islamic Economy Indicator

GMP = Good Manufacturing Practice

GPS = Green practice and sustainability

GW = Global weight

HACCP = Hazard Analysis and Critical Control Points

HAS = Halal Assurance System

HCR = Halal Compliance Rating

HDC = Halal Development Corporation

HFS = Hygiene and food safety

HRC = Human resources and culture

HSC = Halal supply chain

HTMT = Heterotrait-Monotrait Ratio

ICS = Image and customer satisfaction

INHART = International Institute for Halal Research and Training

ISO = International Organisation for Standardisation

JAKIM = Jabatan Kemajuan Islam Malaysia (Department of Islamic Development Malaysia)



KNW = Knowledge of halal and *toyyib*

KPI = Key Performance Indicator

LEED = Leadership in Energy and Environmental Design

LR = Legal requirement

MCDM = Multi-Criteria Decision Making

MFHS = Muslim-Friendly Hospitality Services

MFT = Muslim Friendly Tourism

MGT = Management responsibility

MHMS = Malaysian Halal Management System

MoH = Ministry of Health

MPPHM = Manual Procedure for Malaysia Halal Certification

MS = Malaysian Standard

MSMEs = Micro, Small, and Medium Enterprises

MUI = Majelis Ulama Indonesia

MUIS = Islamic Religious Council of Singapore

NCR = Conformance Report

NFP = Non-Financial performance

NGO = Non-Government Organisation

PCM = Pairwise Comparison Method

PLD = Premise, location, and design

PLS = Partial Least Square

RI = Random Index

RO = Research Objective

RQ = Research Question

SEM = Structural Equation Modelling

SMEs = Small, and Medium Enterprises

SMIIC = Standards and Metrology Institute for the Islamic Countries

SPSS = Statistical Package for Social Science

SRMR = Standardised residual mean residual

TQM = Total Quality Management

UK = United Kingdom

VIF = Variance Inflation Factor



# **CHAPTER-1**

## **INTRODUCTION**

### **1.1. CHAPTER INTRODUCTION**

This chapter not only offers the background material that led to the initiation of the research, but it also argues why it was necessary for the research to be conducted. In addition to this, it contains a discussion of the issue statement, which is then followed by the overall and particular objectives of the research. After that, it proceeds by outlining the relevance of the research as well as its scope. In conclusion, an overview of each of the chapters that will be included in this thesis is provided at the end of this chapter.

### **1.2. BACKGROUND**

The Arabic term halal means "lawful" or "permissible" in Islamic law (*shari'ah*). It is often used to refer to food that is prepared and served according to *shari'ah* principles. The global halal market is a large and growing sector that covers various products and services that cater to Muslim consumers who follow halal principles. According to some estimates, the global Muslim population spent \$2 trillion (excluding Islamic finance) in 2021 and is expected to reach \$2.8 trillion by 2025 (Dinar Standard, 2022). The six major segments of the global halal market are food and beverages, cosmetics, modest fashion, travel and tourism, media and recreation, and pharmaceuticals. These segments of the halal industry are governed by halal standards. Halal standards are guidelines and criteria that ensure the quality and compliance of halal products and services. Different countries and regions have established their own halal standards and certification bodies that regulate and monitor the halal industry. Some examples of halal standards are the Malaysia Halal Standard by the Department of Islamic Development Malaysia (JAKIM), the Halal Standard of Indonesia by the Indonesian Ulema Council (MUI), the

Singapore Halal Standard by the Islamic Religious Council of Singapore (MUIS), the Halal Standards by the Standards and Metrology Institute for Islamic Countries (SMIIC), and several other halal standards globally. The standards in different regions are different due to factors such as different cultures, halal policies, schools of thought (*madhhabs*), laws and regulations, public interest, and logos (Azam et al., 2021). However, the main objective is the same for all halal standards globally, which is to meet the faith-based needs of Muslim consumers across the world. Halal standards cover aspects such as ingredients, processing methods, packaging, labelling, storage, and transportation of halal products and services.

It is essential for every company, regardless of whether it focuses on the production of goods or the provision of services, to ensure that its management and operational procedures conform to the required standards and qualities. This is especially true for businesses that want to become successful and stay competitive in the ever-changing business landscape (Fairman and Yapp, 2005; Chiliya and Roberts-Lombard, 2012). It is even more crucial when it comes to complying with the standards that serve the faith-based needs of the consumers, such as Halal standards. The business organizations promise such compliance to the consumers by declaring it in public and by promising it to the respective authorizing bodies. Some of such standards in the conventional economy and practiced globally, for example, are hotel management systems (e.g., the standard of the crescent hotel rating), sustainability management systems (e.g., International Organisation for Standardisation (ISO) standards, air emission standards, ambient air quality standards, etc.), the standard for Hazard Analysis and Critical Control Points (HACCP) as a food safety tool, etc. All of these standards are designed to ensure that the organizations meet the legal requirements and ethical expectations of society. Besides developing standards and policies, business can also use rating systems that categorize or rate the level of compliance with management and operational systems. These rating systems are used to provide an indication of the degree of safety, quality, and/or compliance with regulatory or other standards achieved by business organisations (Mamajonov and Kuldashev, 2021; Manickam and Ankanagari, 2015) like restaurants.

Developing and introducing such rating systems helps consumers choose their preferences for different products and services based on their needs. (Meister, 2017). A consumer, for instance, may prefer to select a 4-star hotel over a 5-star hotel for his or her vacation. However, due to the complexity and subjectivity of rating systems, it is important for consumers to be aware of the criteria used to create these ratings in order to make an informed decision. Simultaneously, such a rating system helps the business establishments themselves improve their compliance level with the respective business standards. Such compliance impacts the business in two ways. Firstly, it helps them maintain their trustworthiness with the consumers, which leads to positive word-of-mouth marketing and eventually enhanced business performance (Subram et al., 2018). Secondly, it has an impact on the business by differentiating itself from the competitors and gaining a stronger position in the market. Furthermore, by regularly complying with the standards, a business gains greater access to international markets as well as government tenders. Therefore, a rating system serves to benefit both consumers and business establishments in different markets and economy globally (Ly et al., 2015).

The worldwide halal sector is one example of a market that is part of the global economy. The halal industry is one of the industries that is now one of the fastest-growing marketplaces in the world. In 2021, global Muslim consumer spending was estimated to be \$2.0 trillion (excluding Islamic finance) drawing the attention of industry players across the world (Dinar Standard, 2022). The halal sector has flourished because it strives to provide for the religious demands of the world's 1.9 billion Muslims (Dinar Standard, 2022) without compromising on quality or ethics. Because the word "halal," which means "permissible," is also associated with the word "*Toyyib*," which means "excellent quality," the size of the market's customer base is rising at an annual pace of 20 percent in tandem with the expanding population of Muslims throughout the world (Pacific, 2010; Elasrag, 2016). Products and services that comply with halal requirements are known to be safe, ethical, and hygienic, and they are thus highly sought after by consumers all over the world. According the report by Dinar Standard (2021), it is expected to grow at cumulative average growth rate (CAGR) of 7.5% from 2021 to 2025, reaching \$2.8 (excluding Islamic finance) trillion by 2025, due to factors such as an increasingly affluent Muslim population and an increasing demand for halal products and services.

In addition to Islamic banking and finance, which now has a 43 percent share of the Islamic economy, the Halal food industry currently holds a 36 percent share of the market, placing it in second place. (Dinar Standard, 2022; Puri-Mirza, 2022). However, the halal market is no longer limited to the boundaries of the food sector; rather, it has extended its scope to include cosmetics and pharmaceuticals, toiletries, and medical devices, as well as components of the service sector such as logistics, marketing, print and electronic media, packaging, branding, travel and tourism, and financing, and so on. Moreover, halal certification has become increasingly widespread in the past few years, not only indicating which products and services comply with Islamic values, but also providing a guarantee of quality assurance for consumers (Thomson Reuters and DinarStandard, 2018).

This halal industry, like any other industry, also has its own standards to fulfil the faith-based needs of the consumers as well as to provide quality and sustainable products and services globally, although the standard is not universal globally. In addition, the halal industry requires compliance with national and international regulations as well as meeting ethical and environmental considerations. In this regard, the halal standard differs for various features in different nations correspondingly owing to different schools of thought, legislation, customs, and policies. Furthermore, halal standards are also guided by local interpretations of Islamic laws in each country (Azam and Abdullah, 2021). On the other hand, Malaysia has established itself as a prominent player in the establishment of a robust and all-encompassing halal standard, given its position as the leading nation in Islamic economy. (Thomson Reuters and DinarStandard, 2018). Some of the standards, for example, are Malaysian Standard (MS)- 1500 (for Halal foods), MS- 2200 (Cosmetics and personal care), MS-2565 (Halal packaging), and MS-2424 (Halal pharmaceuticals). The most recent standard in the Halal industry is in the service sector of the Halal tourism industry. It was recently developed and published by the Standards and Metrology Institute for the Islamic Countries (SMIIC) to ensure that products and services offered and provided in the Halal tourism industry are *sharia*'h compliant (SMIIC, 2020).

MS-1500, which is for the halal food and beverage (F&B) sector, is one of the most comprehensive standards that has the highest requirements and is used the most often out of all the standards (Azam and Abdullah, 2021). MS-1500 was first introduced in 2014 and is endorsed by many of the major halal certification bodies globally. However, the standard does not include certain key components that consumers (especially non-Muslim consumers) search for since its primary emphasis is on catering to the religious requirements of Muslim customers. Some of these crucial components are not being addressed, and they include environmentally responsible business practices (Razalli et al., 2012) although the auditing process include inspection of some of the green elements, strong corporate cultures, satisfied customers, innovative branding and design, and others (Azmi et al., 2018). All these elements fall under the *toyyiban* aspect of the halal assurance system and can be adopted by the halal standards as suggested by Azmi et al. (2018). Therefore, it is debatable whether or not complying to simply the requirements of MS-1500 is the ideal halal compliance practice that might be recognised and appreciated by all consumers, regardless of faith. Consequently, there is a need to introduce additional criteria that incorporate these missing components into the model of halal compliance practices in order to provide a more holistic approach to halal compliance.

In the context of Malaysia, the country has demonstrated an impressive performance in terms of implementing the standards by providing a number of different Halal certification schemes. This is due to the fact that Malaysia has been successful in developing Malaysian standards for various fields of the Halal industry. These standards have been accepted and recognized by international Halal certification bodies and have become a benchmark for other countries that aspire to reach the same level of compliance. Jabatan Kemajuan Islam Malaysia (JAKIM) is the sole organization issuing Halal certification in Malaysia. According to the 2015 economic census, which was released in 2017, a total of 6,138 establishments received a Halal certificate, and the number of applications is increasing tremendously every year (Department of Statistics Malaysia, 2017). Such growth is evident by Alagesh (2022), who reports from Halal Development Corporation (HDC) that as of today, more than 10,000 Small and Medium Enterprises (SMEs) have received halal certificate from the JAKIM. This indicates that there is a growing demand for halal goods and services, and a

corresponding increase in demand for halal certification. A similar trend is observed in other countries as well. For instance, as of 2017 report, 127,286 products have been certified by the Majelis Ulama Indonesia (MUI) which proves the booming halal market in Indonesia (Mufti, 2018). Additionally, The Islamic Religious Council of Singapore (MUIS) has certified more than 4,400 premises and 54,378 types of products made in Singapore which is five times more than in past decades (MUIS, 2018).

Like any other certification system for any standard, the Halal certification system also has its monitoring and auditing bodies to ensure the compliance of certified business organizations towards halal standards and requirements. To ensure the quality and accuracy of the Halal certification process, JAKIM has implemented a number of procedures and systems to guarantee that standards are adhered to (Othman et al., 2016). For example, providing training on different aspects of halal and introduction of Malaysian Halal Management System (MHMS). However, the evaluation of halal compliance practices by business organisations is yet to be measured (Rahman et al., 2017; Rejeb et al., 2021). Therefore, there is a need to develop a comprehensive evaluation framework that can be used to assess the level of halal compliance in businesses. In this regard, studies have been conducted on halal compliance by a limited number of researchers that include Ly et al. (2015); Randeree (2019); Mohamed and Mansor (2014); Salindal (2018); Baharuddin and Ismail (2018); Mohamed et al. (2014); Sorooshian and Dahan (2013); Rahman et al. (2012); Zailani et al. (2011), and others. One of the common problem statements in all these studies was the issue of monitoring halal compliance in the business and the related requirements, laws, and constraints. However, there is still a lack of consensus on the development of an appropriate evaluation framework that can be applied to measure the level of halal compliance in businesses.

Additionally, studies have also been carried out to evaluate business performance against certain management practices and standards mentioned earlier. Such performances have been looked at from both the financial (Anderson, 2000; Rogers and Bamford, 2002) and the managerial (Sherman and Gold, 1985; Cragg, King and Hussain, 2002) perspective. For example, Mohamed et al. (2014) and other researchers have found a significant relationship between halal certification and



financial performance of a business. Likewise, a positive relationship was found between halal compliance practices and non-financial performance of business companies (Othman et al., 2017), although the relationship was not significant. However, further research needs to be done in this area to explore the potential effects of halal compliance practices on business performance.

The business performance of micro, small, and medium enterprises (MSMEs) is very important and has been emphasized by the government as they are the major contributors to the GDP in most countries globally (Vandenberg et al., 2016). According to a report by Bank Negara Malaysia in Feb 2016, MSMEs contributed to 43.5 percent of total employment and are responsible for 57.8 percent of total new jobs created. The report also states that SMEs in Malaysia constitute more than 98 percent of the total establishments which has enabled Malaysia exhibiting a leading performance in the fields of Islamic economy for a long time, and as of 2022 it still holds the number one position based on the Global Islamic Economy (GIE) indicator score (Dinar Standard, 2022; Thomson Reuters and DinarStandard, 2018). Engaging more and more MSMEs in the Halal business and improving their performance is essential if the nation is to maintain its current position as a leader in the Halal industry and the economic prosperity of its citizens. These MSMEs are extending their membership in the halal sector at a rate that is seen in the growing number of halal certifications, as was discussed before. The 2016 census conducted by the Department of Statistics Malaysia revealed that there were 167,490 F&B establishments in operation (Department of Statistics Malaysia, 2017) representing a significant percentage of the owners as MSMEs. However, due to their size and limited access to resources, these MSMEs are not yet equipped with the technical capabilities necessary to comply with the requirements of halal certification (Razak et al., 2018; Abdullah et al., 2020; Prasanna et al., 2019). Therefore, it is essential to focus on developing a system of appraising the compliance performance that support the growth and development of these businesses in order to ensure their sustainability and success in the global halal industry.

The business performance of a company can be appraised in a number of ways. A number of frameworks for measuring performance have been introduced by different scholars. For example, Balanced Scorecard (Kaplan and Norton 1996), the European

Foundation for Quality Management (EFQM) Business Excellence Model (Shergold and Reed 1996), and Integrated Performance Measurement. Other performance tools that are also in practice are Total Quality Management (TQM), Key Performance Indicators (KPIs), Benchmarking etc. Another method, which is also one of the most popular approaches, is the ranking and rating system. This system involves comparing companies according to certain criteria and assigning them a numerical rank or grade that reflects their relative performance. For example, Leadership in Energy and Environmental Design (LEED) in sustainability rating. Similarly, Building Research Establishment Environmental Assessment Method (BREEAM) is considered to be the benchmark in sustainability rating globally (Nguyen and Altan, 2011a). Examples of rating systems in halal industry include Crescent Muslim-Friendly Hotel Rating system, Muslim-friendly hotel rating system for Muslim-Friendly Hospitality Services (MFHS) known as MS2610:2015, Global Islamic Economy Indicator (GIEI) score for ranking countries in the fields of Islamic economy, and Food Hygiene Regulations (FHR) 2009 for restaurant hygiene rating in Malaysia. However, a comprehensive and robust model of halal compliance rating (HCR) has been lacking in the halal food industry to measure the halal compliance practices of the restaurants and appraise their performance through rating and ranking them accordingly. To address this issue, the present research aims to develop the best practices of the HCR model, which can be used to reliably rate the halal compliance practices of restaurants.

One of the several ways of improving the business performance of MSMEs in the Halal industry is to measure their halal compliance level and rate their performance accordingly. The existing measuring practice by JAKIM is on the non-compliance practices of halal-certified business which are rated as ‘minor offense’, ‘major offense’, and ‘serious offense’ (JAKIM, 2015). However, these non-compliance levels by JAKIM are based on the violation of any regulation or absence of a requirement prescribed the respective halal standards. Hence, these offenses do not reflect any compliance level. In this regard, the latest version of Malaysia Halal Management System (MHMS) 2020 details out all the requirements to be fulfilled by any business company applying for halal certification. MHMS 2020 evaluates the halal compliance practices against the requirements specified in the document (JAKIM, 2020). The compliance level is graded at four levels, as Grade A, B, C, and D. However, there are

several limitations. Firstly, this grading is applied to only those companies that are willing to apply for and get halal certificates from JAKIM for their products and/or services. Another drawback is that the criteria for rating are limited to the requirements of MHMS 2020 and the Manual Procedure for Malaysia Halal Certification (MPPHM). Moreover, the grading system is a general one that is applied to all sectors of the halal industry and is not specific. Thus, this may not be the suitable grading system for an in-depth assessment of halal compliance practices for a sector specific company like halal certified restaurants in the halal F&B industry.

In addition, the researcher was unaware of any study that has attempted to quantify the degree of halal compliance and grade them appropriately, despite the fact that this is an important component for halal-certified SMEs. According to research conducted, a customer's degree of conformity with certain practices or standards, such as the sustainability standard, has a big influence on the consumer and drives more purchase choices. At the same time, a compliance level of this kind makes it possible for the company to establish a competitive position in the market. (Asia Pulp and Paper, 2019; Veit et al., 2018). One good illustration of this is the consumer's choice to purchase a product or service based on the hotel rating system while selecting a hotel for their stay (Ezzaouia and Bulchand-Gidumal, 2020). In a similar vein, a rating system for firms, that have been certified as halal, would improve the performance of such businesses in complying with the components of their respective halal compliance rating models.

In the context of this discussion, the rating for halal compliance practises as well as the measurement of business performance are relevant to all business organisations that claim to be halal-certified and that provide halal goods and services. Nevertheless, one of the most important areas is the halal food sector, which is also the largest sector in the worldwide halal business, second only to Islamic banking in terms of market share. And with regards to the halal food sector, restaurants and other eating establishments are one of the most important commercial areas there are. This is because the halal food sector is inextricably linked to the everyday lives of many Muslim individuals and families, making it especially important to ensure that these restaurants and other eating establishments adhere to the highest standards of halal

certification. Food is one of the basic needs of human being that falls under the necessity level of *daruryyiat* of *sharia* 'h. The global halal food and beverage market spending in 2017 was US\$1.3 trillion which is projected to reach US\$1.9 trillion by 2023 (Thomson Reuters and DinarStandard, 2018). This statistic was impacted by the hit of COVID-19 pandemic, although the halal food sector was least affected. However, it managed to overcome the impact and showed a performance of 7.1% growth rate with US\$1.267 trillion in 2020 to US\$1.668 trillion in 2021 (Dinar Standard, 2022). This statistical evidence implies the increasingly high demand for halal foods and beverages (F&B) globally.

As a result of this fundamental need, restaurants are the types of commercial businesses that, most typically, offer services related to the provision of meals and drinks. One of the biggest service providers in F&B industry is the restaurants scattered in different locations in the market. In recent years, there has been a fast expansion in the number of restaurants offering fine dining, foreign chain restaurants, and cafés. According to the report “Food and Beverage Industry Report Malaysia” (2020), it is estimated that more than 31 percent of people in Malaysia spend their discretionary cash on eating out. The report also reveals that restaurants and hotels remained one of the key spending components contributing 13.9% of the total average monthly household expenditure. Food and restaurant trends for 2020 in Malaysia include plant-based and vegan alternatives; open kitchens; juice pairings and other non-alcoholic drinks; the use of local foods; and pick-and-go businesses. Simultaneously, the responsibility of providing the faith-based needs (*halal* and *toyyib* foods) of consumers is shouldered on the halal-certified restaurant operators (Rahman et al., 2012). Good halal compliance practices are a must for all these kinds of restaurants and food premises. In the context of Malaysia, the duties or obligations for halal-certified restaurant providers are reflected by the Halal Standard 1500:2019. However, some recent non-compliance issues in halal restaurants have raised concerns among consumers regarding the reliability of halal certification in Malaysia (Tiema, 2019; Rahman et al., 2012). Therefore, it is essential that restaurant owners and other food-based businesses implement stringent halal-compliance practices to ensure the safety and quality of the food they serve. To help restaurateurs and other food providers comply with halal standards, an established model of halal compliance rating is crucial.

### 1.3. PROBLEM STATEMENT

**Lack of rating system in the growing halal food industry:** The number of Halal-certified businesses is increasing every year (Department of Statistics Malaysia, 2017), as is the number of Halal-certified restaurants. Subsequently, it leads to an increase in the number of options for consumer preferences as well as the number of competitors in the market. Considering the halal concern (i.e., to what level the food and food service provider is compliant to halal standard) of consumers, the halal food industry is lacking any means of prioritising the choices of consumers and differentiating the performance of halal businesses (e.g., restaurants) amongst themselves. Simultaneously, the halal industry lacks a rating system that can assess the halal compliance performance of individual halal restaurants and food premises using various levels of halal compliance ratings.

**Research gap in implementing a halal compliance rating system:** While having a halal certificate is a prerequisite for businesses to use the halal logo, it's crucial for them to effectively implement halal standards. This ensures genuine halal products and services, earning consumer trust. While JAKIM investigates non-compliance offences, assessing halal compliance levels and rating businesses has become essential. Existing research has primarily focused on certification and business performance, with limited attention to factors of non-compliance and compliance impact. However, there's a lack of research evaluating the degree of adherence to halal practices and classifying compliance levels. Further research should explore the effectiveness of a halal compliance rating system in promoting best practices among certified businesses. (Sorooshian and Dahan, 2013; Zailani et al., 2011; Rahman et al., 2012; Ly et al., 2015; Baharuddin and Ismail, 2018; Salindal, 2019; Mohamed et al., 2014; Yunus et al., 2014)

**Need for expanding halal standards towards a more inclusive compliance approach:** When it comes to the halal food and beverage (F&B) industry, the most stringent and widely used standard is MS1500:2019 as compared to other quality standard like ISO9001, Good Hygiene Practice (GHP), and Hazard Analysis Critical Control Point (HACCP). Its major focus is on meeting the religious needs of Muslim

customers, although the standard omits many crucial components that consumers (particularly non-Muslim consumers) look for. The auditing process of other quality managements includes evaluation of some of the green characteristics, such as ecologically responsible company operations (Razalli et al., 2012), strong corporate cultures, satisfied customers, innovative branding and design, and others. These aspects are not being addressed (Azmi et al., 2018) by the halal standards and while evaluating halal compliance. Whereas *Toyyiban* is a part of the halal assurance system that allows for these features to be accepted by the halal standards, as proposed by Azmi et al. (2018). Thus, it is questionable if adhering to the standards of MS-1500 alone is the best halal compliance strategy that may be recognised and welcomed by all customers, regardless of religion. For this reason, a more all-inclusive method of ensuring halal compliance requires the introduction of new criteria that include the previously absent elements.

**Gap between customer satisfaction and halal compliance:** Given the importance of halal compliance rating, it has become one of the most significant challenges in the halal industry, particularly in the halal food sector, to minimise the research gap regarding halal certification, halal standards, and halal compliance (Randeree, 2019). This will strengthen the confidence level of consumers who choose halal products and services. For instance, when there is no compliance rating available, it will be difficult for a customer to analyse halal compliance and choose a restaurant from a list that has more than one option. This is true even if all other factors stay the same. In such cases, customers will have to rely on other criteria, such as reviews and ratings from other customers or their own experience, in order to make an informed decision. Customer service is crucial. According to the report by Pemberton (2018), 81% of marketers regard customer satisfaction as their industry's major rival. But that's not all. 59% of consumers depart after numerous unpleasant encounters, and 17% after one bad experience. Unfortunately, most of the MSMEs in Malaysia do not realise the importance of having customer satisfaction survey either offline or online. Recent report shows that only 37.8 percent of the companies in Malaysia have a website (*Malaysia Economic Monitor June 2021: Weathering the Surge*, 2021). This indicates the incomplete criteria for halal compliance assessment. Therefore, the researcher decided

to conduct a study that aims to address this gap in the literature by assessing and ranking the degree of halal compliance within halal-certified food establishments.

**Lack comprehensive compliance ratings to ensure effective halal practices:**

The effectiveness of a company's halal practises must also be reflected in its compliance rating in order to demonstrate that the company complies with all halal standards and requirements. This is necessary in order to lessen the likelihood of consumers being harmed as a result of the provision of products and services that are substandard or that do not comply with Halal requirements. Additionally, an independent audit should be conducted to ensure the accuracy and credibility of the company's halal practices and compliance ratings. Such issues on non-compliance have been addressed by a number of scholars ( Tiema, 2019; Tieman, 2017; Yapp and Fairman, 2005; Rezai et al., 2012) where consumer trust in the halal logo has been identified as being shaken because of poor monitoring and ineffective implementation of the halal standard by JAKIM personnel. To restore consumer trust in the halal logo, JAKIM must ensure that the monitoring and implementation of the halal standard are consistently of high quality. This can be done by developing and implementing a halal compliance rating (HCR) model that incorporates all the components that are required by consumers as well as the JAKIM standard. Such inclusiveness would create the best practice for HCR in halal F&B industry.

**Lack of research on the impact of halal compliance ratings on the businesses performance:** In addition to halal compliance and business performance, previous studies have investigated whether or not halal certification has any positive impact on business performance in terms of operational, marketing, and financial aspects. (AbTalib, 2018; Mohamed et al., 2014; Salindal, 2019). Specifically, halal certification and business performance have been the focus of these studies. On the other hand, there has been no effort made to determine the effect that different levels of ratings have on the business performance. It is essential to determine whether or not the performance of the company exhibits any kind of correlation or behaviour with the various classifications or degrees of halal compliance.

#### **1.4. RESEARCH QUESTIONS**

A research question (RQ) is a specific inquiry to which further study is intended to provide a response. It is the bedrock of every scientifically sound study, and it helps the researcher plot out a specific plan of action for conducting their investigation. The research question should be specific enough to answer within the scope of the investigation and to support the development of an effective methodology for data collection and analysis (Thabane et al., 2009). In light of the preceding facts and the problem statement, the current research makes an effort to address the following research questions-

- RQ 1.** What are the components that form the best practice of Halal Compliance Rating (HCR) model?
- RQ 2.** How should the weights of the HCR components be measured and prioritised, and what is the suitable language representation of halal compliance rating?
- RQ 3.** How does the Analytic Hierarchy Process (AHP), a decision-making tool, fit within the HCR framework to rank and rate halal-certified restaurants in Malaysia?
- RQ 4.** How to validate the model of best practice of HCR and how does the model fit the components that have been chosen for halal compliance rating?

#### **1.5. OBJECTIVES OF THE RESEARCH**

The following general and specific objectives have been established for this study based on the RQs that have been identified earlier in the chapter.



### **1.5.1. General objective**

The general objective of this research is to recommend the best practice of the HCR model for MSMEs of halal-certified restaurants in Malaysia while, at the same time, validating the model by ranking and rating halal-certified restaurants in Malaysia.

### **1.5.2. Specific Objectives**

The overarching goal of the research has been broken down into the following specific objectives:

- RO 1.** To identify and select the components of best halal compliance practice by the MSME owners of halal restaurants in Malaysia.
- RO 2.** To investigate the methods used by the various rating systems that are already in place in the relevant industries, with the following sub-objectives:
  - a) To measure the weights of the selected HCR components by applying the Analytic Hierarchy Process (AHP) method.
  - b) To recommend a linguistic rating scale for the numerical HCR score of halal-certified restaurants in Malaysia.
- RO 3.** To develop an HCR tool applying the absolute measurement of AHP and apply the tool to rank and rate halal-certified restaurants in Malaysia.
- RO 4.** To validate the model of best practice of HCR (BPHCR) by examining the relationship between different ratings of halal compliance and the business performance of the MSME owners of halal restaurants in Malaysia.

## **1.6. RESEARCH HYPOTHESES**

A research hypothesis, which may also be referred to as a "scientific hypothesis," is a statement that discusses the anticipated results of an investigation. In order to answer RQ4 and reach the goal of this study, RO4, as described in earlier sections, the following hypotheses were tested using the appropriate methods:

- Hypothesis 1.** (H<sub>1</sub>): Knowledge of halal and *toyyib* (KNW) has significant impact on best practice of HCR (BPHCR).
- Hypothesis 2.** (H<sub>2</sub>): Management responsibility (MGT) has significant impact on BPHCR.
- Hypothesis 3.** (H<sub>3</sub>): Premise, location, and design (PLD) has significant impact on BPHCR.
- Hypothesis 4.** (H<sub>4</sub>): Hygiene and food safety (HFS) has significant impact on BPHCR.
- Hypothesis 5.** (H<sub>5</sub>): Human resources and culture (HRC) has significant impact on BPHCR.
- Hypothesis 6.** (H<sub>6</sub>): Branding, packaging, and labelling (BPL) has significant impact on BPHCR.
- Hypothesis 7.** (H<sub>7</sub>): Image and customer satisfaction (ICS) has significant impact on BPHCR.
- Hypothesis 8.** (H<sub>8</sub>): Legal requirements (LR) has significant impact on BPHCR.
- Hypothesis 9.** (H<sub>9</sub>): Green practice and sustainability (GPS) has significant impact on BPHCR.
- Hypothesis 10.** (H<sub>10</sub>): Halal supply chain (HSC) has significant impact on BPHCR.
- Hypothesis 11.** (H<sub>11</sub>): BPHCR has significant impact on overall business performance (BP) of halal certified restaurants in Malaysia.
- Hypothesis 12.** (H<sub>12</sub>): BPHCR has significant impact on financial performance (FP) of halal certified restaurants in Malaysia.
- Hypothesis 13.** (H<sub>13</sub>): BPHCR has significant impact on non-financial performance (NFP) of halal certified restaurants in Malaysia.

## 1.7. SIGNIFICANCE OF THE STUDY

This study bridges a significant research gap within the halal industry by introducing a novel approach to measuring, categorizing, and rating halal compliance levels. It pioneers the development of a Halal Compliance Rating (HCR) system, offering a valuable tool for performance appraisal in halal-certified businesses. By establishing

minimum rating requirements for certification and enabling ongoing monitoring, this system enhances transparency and accountability in halal compliance efforts. Moreover, it lays the groundwork for future research endeavours, offering a comprehensive framework for scholars to delve deeper into the nuances of halal management and its impact on business performance.

As the first study of its type, this investigation has the potential to make a significant contribution by serving as the basis for a halal compliance rating system that can be used by certified businesses in the halal sector. As a result, it will have a solid foundation on which to claim on halal rating system or an HCR tool for halal management for the purpose of eventual commercialization. The findings of this research should also provide an understanding of the demands and needs in the halal food and beverage industry by realising the impact of halal compliance practises on overall business performance.

From a practical standpoint, the proposed HCR system holds immense potential for various stakeholders. For businesses seeking halal certification, it provides a roadmap for achieving and maintaining compliance standards. Regular updates and on-site audits facilitated by the HCR system ensure continuous improvement and accountability. Consumers benefit from enhanced transparency, enabling informed choices when selecting halal-certified establishments. Certifying authorities, such as JAKIM, gain a more effective means of auditing and monitoring certified businesses, thereby upholding the integrity of the halal logo. Overall, the HCR system not only enhances business practices but also strengthens consumer trust and regulatory oversight within the halal industry.

## **1.8. SCOPE OF THE STUDY**

Despite the growing number of halal-certified firms and the many studies that have evaluated halal compliance practises, the issues of quantifying the level of halal compliance and rating them appropriately have not been addressed. Hence, the aim of

this research is to develop and validate the HCR model as a performance appraisal tool for MSMEs in halal-certified restaurants in Malaysia.

The current research focuses on halal-certified restaurants across Malaysia, with the goal of determining the restaurants' levels of halal compliance and assigning appropriate ratings to them. Because of these three factors, Malaysia is an important locational consideration for the scope of the project. In the first place, Malaysia is now in the driver's seat when it comes to the Halal business on a worldwide scale; as a result, this should also lead to the development of an HCR tool before any other economy takes the lead. Second, the location is advantageous for the researcher in terms of carrying out the field survey and collecting the data because of its close proximity. The population of halal-certified restaurants is rather large, which is the third significant scope that was discovered throughout the data gathering process. However, the scope of future study will embrace a larger variety of locations and contexts around the globe. Simultaneously, the research has the potential to develop an instrument (a questionnaire) for data collection that, in the future, may be used as a reference in order to establish the HCR model as an auditing tool for ranking and rating halal certified restaurants in Malaysia.

The study has the potential to use the content analysis method in order to accomplish its first goal, which is to explore and pick the components of best halal compliance practice. In order to do this, it has the scope to use the approach of content analysis. Because there are sufficient numbers of halal standards and sufficient amounts of relevant research in the disciplines of halal industry, such a scope is important. Concurrently, the well-recognised halal food standard MS 1500:2019 was used as the primary point of reference in the process of selecting HCR components.

In terms of methodology, the study applies the Analytic Hierarchy Process (AHP) method of decision making, which is also one of the most popular methodologies for ranking and rating systems globally. AHP can be adopted to measure the weights of HCR components, rate intensities, and determine the ranking and rating of halal certified restaurants. This process involves collecting data from experts on their perceptions of the HCR components and analysing this information to assign weights

to each of the components. In this regard, the participation of experts (academicians and industry personnel) from relevant fields of the halal industry has widened the scope of the process of relative comparison and prioritising the selected HCR components. In addition, to test the proposed HCR tool in real practice, this study focuses on 1,583 halal-certified restaurants in Malaysia. The data was collected through online or offline settings. The survey was conducted using a self-administered questionnaire, as an on-site audit required official approval that was beyond the researcher's capacity.

Finally, the scope of the study is extended to quantitative approach of data analysis. Two sets of quantitative data were collected. Firstly, the data for the pairwise comparison scores provided by the experts through AHP tool. Secondly, the data collected from the sample population (halal-certified restaurants) through the application of HCR instrument. Apart from ranking and rating the halal compliance level, the scope of analysis also included descriptive analysis and Structural Equation Modelling (SEM) analysis. Simultaneously, SEM analysis included both measurement and structural model analysis that involved analysing cross loadings, reliability analysis, convergent and discriminant validity analysis, collinearity analysis, path coefficient analysis, magnitude and size of effect, and hypothesis testing. The data analysis tools used included the Statistical Package for Social Science (SPSS), Microsoft Excel, and SmartPLS (Smart Partial Least Square) software.

## **1.9. CHAPTER OUTLINES OF THE RESEARCH**

The arrangement and flow of the chapters for the current research is illustrated in Figure 1.1. The thesis is comprised of seven chapters starting with an introduction as **Chapter 1**. This chapter provides context for the study and reasons why it was required. It also discusses the problem statement, and the general and specific research objectives. Then, it describes the research's significance and breadth. This chapter's conclusion provides a summary of each thesis chapter.

The **Chapter 2** reviews past studies, books, and academic articles accessible online, in libraries, and newspapers. It begins by examining the definition of Halal, then

the Halal food sector and restaurants. In addition, MSMEs were defined, and their significance reviewed. This chapter identifies ten components for best practice of HCR model. This is done by examining relevant standards, legislation, rating systems, and previous research. After identifying HCR components, the chapter reviews the AHP technique for weighing them. The chapter also reviews weighted average performance and compliance grading methods. This study is followed by an examination of the linguistic expression of various restaurant rating systems. Finally, the influence of rating and compliance on company's business performance was reviewed to establish the hypothesis and to identify MSMEs' business performance measurement criteria. A conceptual research framework of the best practice of HCR model has been provided at the end of the chapter.

Having established the context for the chapter, we move on to the methodology and design of the study in **Chapter 3**. The research methodology used at each stage has been broken down into its component parts. In addition, the hypotheses have been formulated, the observable and latent variables have been identified, and the survey instrument (questionnaire) structure has been developed. The chapter begins with an outline of the methodologies, then moves on to describe the study's population and sampling approach, and then describes how the study would analyse its data.

**Chapter 4** achieves the 3<sup>rd</sup> research goal, which is develop an HCR tool using AHP absolute measurement. The chapter presents the findings from applying absolute AHP measurement methodology that involves five stages: (1) selecting HCR components and constructing the hierarchy, (2) determining weights of HCR components using relative measurement, (3) developing ranges of rating categories of each HCR component and measuring weights, (4) measuring overall HCR score of one alternative (i.e., restaurant), and (5) ranking and rating the overall HCR score linguistically. The detail calculation and findings of each of the five stages are presented in this chapter.

**Chapter 5** talks about the descriptive results of the research and analysis of the data. The results are based on data collected from 320 halal-certified restaurants in Malaysia that were chosen following convenient sampling approach. The first part of

the chapter shows background statistics about the respondent and talks briefly about their business profile. The results of the descriptive statistics for the ten HCR components and the business performance of the respondents come next. Additionally, findings on the ranking of the restaurants have been provided. The results of the calculated overall HCR scores are presented into groups based on the linguistic rating. This chapter also achieves the last objective of the research. It presents the detailed analysis and results of the data collected and used in this research. The model of the best halal compliance practise (BPHCR) that was conceptualised during this study is validated in this chapter. Findings of both measurement and structural model analysis are presented in this chapter. The chapter ends with the presentation of model fit analysis results and the results of hypotheses testing and discussion on the hypothesis.

In the last chapter of the report, **Chapter 6**, conclusion and recommendations are presented. It begins with a brief overview of the study, and then moves on to a conclusion on the current investigation. It is then followed by the presentation of some recommendations intended for policymakers, government officials, and future academics working in related topics. At the end of the chapter, a discussion of the constraints faced by the researcher is presented.

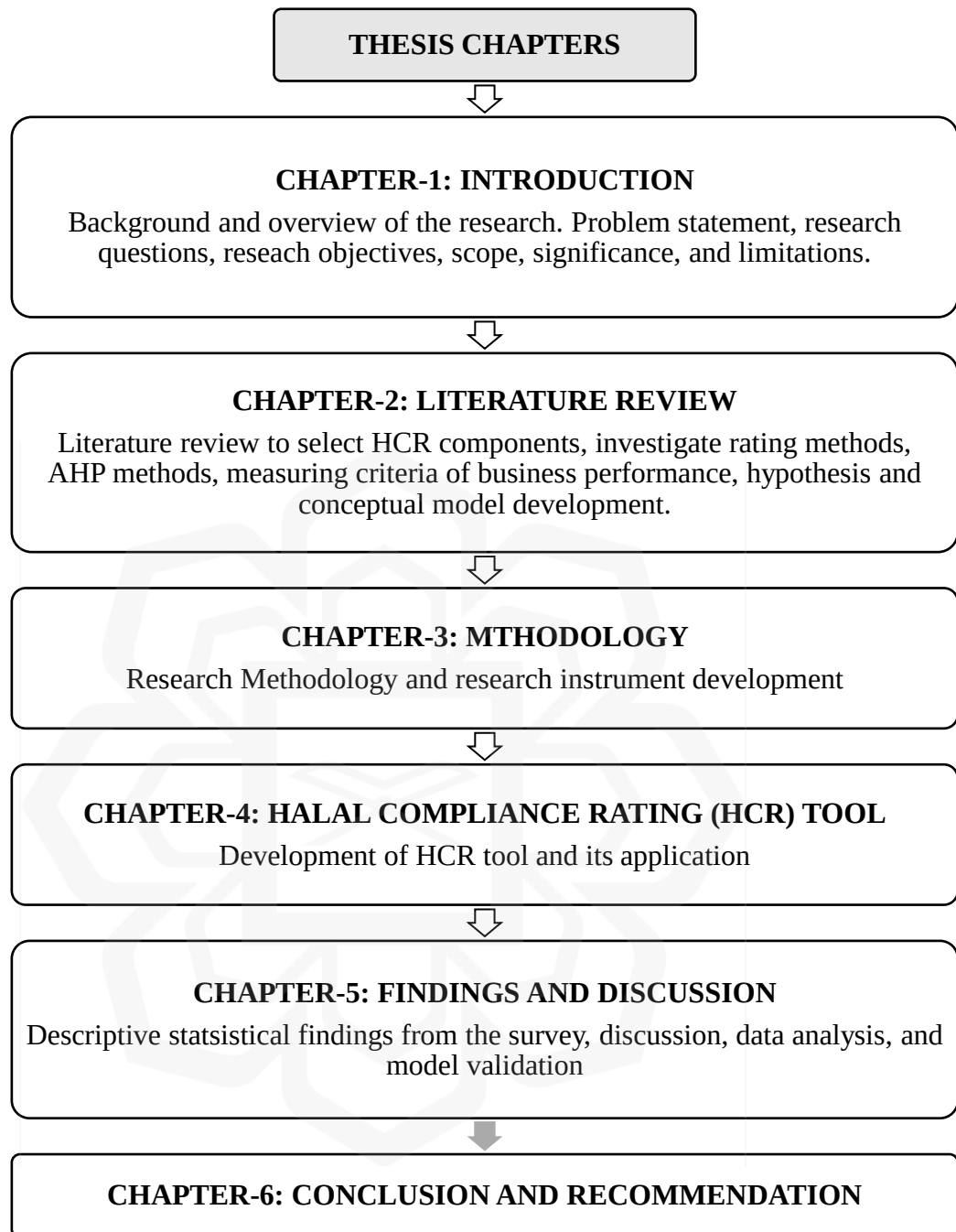


Figure 1. 1 Chapter Outline of the thesis



## 1.10 DEFINITION OF TERMS

To ensure a clear understanding of the specific terminology employed throughout this research, this section provides definitions of key terms. This glossary serves as a reference point for the operational terms used in the subsequent chapters.

**Analytic Hierarchy Process (AHP):** A multi-criteria decision-making technique used to evaluate and compare options or alternatives in a hierarchical structure.

**Average Variance Extracted (AVE):** The ratio of the variation explained by the construct to the variance explained by measurement error. AVE value is observed to establish convergent validity in SEM analysis.

**Coefficient of determination ( $R^2$ ):** In SEM, it is a measure of the amount of variance in a latent variable that is explained by the observed variables in the model.

**Composite reliability (CR):** One of the indicators of reliability analysis. It measures the internal consistency of observed variables loading on the latent variable.

**Consistency Index (C.I.):** It is used to measure the degree of consistency in pairwise comparison matrix.

**Construct validity:** Refers to the extent to which the used measures (often questionnaires) really evaluate the hypothesis or theory they are evaluating.

**Convergent validity:** Indicates how well a new scale is related to existing variables and other measures of the same construct. It is determined by monitoring the AVE value.

**Discriminant validity:** The degree to which a test is not connected to other tests in which the constructs being measured are different.

**Factor loading:** Represents the strength of the relationships between the observed variables and the latent variables.

**Fornell and Larcker criterion:** One of the criteria used to establish discriminant validity in SEM analysis.

**Global weight:** A measure in the rating calculation of AHP method. It is found by multiplying the criteria weights by their respective rating intensity's weights.

**Halal Compliance Rating (HCR):** A numerical measurement to appraise the performance of halal compliance practices by an individual business such as a restaurant.

**Halal compliance:** Refers to the practises done before, during, or after an operation to ensure adherence to the halal standard, as well as any commercial or sustainability-related contractual obligations that reflect halal and *toyyib* concept.

**Halal:** Anything that is permissible in *Sharia'ah*

**Heterotrait-monotrait (HTMT):** One of the criteria used to establish discriminant validity in SEM analysis. Accepted threshold value ranges from 0.85 to 0.90.

**Hypothesis:** A research hypothesis, which may also be referred to as a "scientific hypothesis," is a statement that discusses the anticipated results of an investigation.

**Linguistic expression:** A conversion of numerical ratings to improve the clarity and interpretability of the ratings, making them more useful and easier to understand for a wide range of audiences.

**Measurement model:** Refers to the part of the model that specifies how the observed variables in the study are related to the latent (unobserved) variables.

**Multicollinearity:** Refers to high intercorrelations in a multiple regression model.

**Pairwise Comparison Method (PCM):** Prioritising each criterion by pair using Saaty's priority scale of 1–9 is an important part of the AHP technique.

**Path coefficient:** Describes the strength of a particular connection of a construct in regression analysis.

**Predictive relevance ( $Q^2$ ):** It is a measure of the ability of the model to predict the values of an unobserved (out-of-sample) variable based on the values of the observed variables in the model.

**Random Index (RI):** The mean of the C.I. values for all possible comparison matrices of equal size. A metric used to calculate the consistency ratio in AHP.

**Reliability:** A term used in statistical analysis to describe how consistently the results of repeated measurements from the same scale are obtained.

***Shari'ah*:** Guidelines of living life and all kinds of consumptions for human being on this planet in the light of Islam.

**Standardised residual mean residual (SRMR):** It is a measure of the fit of the model to the data. It is calculated as the average of the standardized residuals, which are the residuals (prediction errors) divided by their standard errors.

**Structural Equation Modelling (SEM):** A family of statistical models that aims to explain the correlations between multiple variables within a research model.

**Structural model:** Refers to the part of the model that specifies the relationships between the latent (unobserved) variables in the study. The structural model specifies how the latent variables are related to each other and to the observed variables in the study.

**The consistency ratio (CR):** It is the comparison of Consistency Index (CI) with the random index (RI). It's a useful metric for evaluating consistency of the AHP's pairwise comparison outcomes.

***Toyiban:*** All good aspects (healthy, sustainable, quality, ethical, etc.) of a product or service.



## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1. INTRODUCTION**

This chapter reviews literature from previous research, books, and scholarly articles found from an online search, library search, newspaper, and other sources. It reviews the concept of *Halal* followed by the present situation of the Halal food industry and Halal restaurants. Simultaneously, a brief review on the definition and significance of the SMEs has been provided. The focus of this chapter was to identify the components of best halal compliance practice for the restaurants in Malaysia. In this regard, an extensive review of different standards, regulations, relevant rating systems, and existing research work was provided. After identifying the HCR components, the chapter follows with a review of the AHP method for measuring the weights of the selected HCR components. Additionally, the chapter explores the weighted average method of performance appraisal and compliance rating by reviewing relevant rating systems. This review is followed by investigating the linguistic expressions of different rating system in restaurants and other relevant sector of food industry. Finally, the impact of rating and compliance on the business performance was reviewed to formulate the hypotheses and explore the measuring criteria of business performance of MSMEs. A research framework was developed and illustrated at the end of the chapter.

#### **2.2. DEFINITION OF HALAL**

The literal meaning of *Halal* in Islam is perceived as permissible. Such meaning is rooted in the word *halla*, *yahillu*, *hillan*, *wahalan* which indicates something allowed, lawful, and not forbidden in Islam (Al-Qaradaawi, 2013). These root words were also mentioned in the Manual Procedure for Malaysia Halal Certification (third revision) to define *Halal* (JAKIM, 2015). Simultaneously, this permissibility aspect of *Halal* needs

to be implemented in every sphere of human life (Azam et al., 2019). A similar statement was given by Hussain and El-Alami, (2007) to define the concept *Halal* in their study where it says that Islam provides guidelines on consumption, worshipping the creator, and social, economic, as well as political conduct of human life.

Additionally, a number of scholars and organizations (Miskam et. al., 2015; FAO; WHO; JAKIM, 2015; Pacific, 2010; Kamarulzaman et. al, 2017; Majid et. al, 2015) defined the concept of *Halal* by putting importance on its *Toyyiban* aspect. All these definitions reflect the sustainability and ethical attribute of *Halal* besides the religious concern of the concept. An interesting illustration of the *Halal* concept was deducted by Azam, et. al (2019) from reviewing the literature and past studies. In that study, *Halal* as an acronym reflects all the possible attributes and aspects elaborated in Table 2. 1.

Table 2. 1 Definition of Halal where the word ‘Halal’ has been adapted as an acronym.

| Attributes                      | Explanation                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>H=</b> Healthy and Harmless  | <i>Toyyiban</i> aspect guarantees Halal is healthy and harmless for humans and the environment. It addresses Halal's ethics and morals.                                                                                                                                                                                                                               |
| <b>A=</b> Assured and Authentic | Any Halal-certified item is guaranteed in quality and authenticity and respects Halal's ethics and religion.                                                                                                                                                                                                                                                          |
| <b>L=</b> Lawful and Legal      | Halal's literal definition (lawfulness) is Islamic. Different regulatory organisations' definitions adopt national legislation (e.g., Trade description act, animal welfare act etc.). Any Halal item is <i>Shari'ah</i> -compliant and lawful in a location. Alcohol, meat, gambling, etc. are not lawful in Islam although they might be legal in certain location. |
| <b>A=</b> Able to sustain       | Halal supports animal welfare, social responsibility, sustainability, economic and social justice, and ethical investing. The first three features show Halal's durability.                                                                                                                                                                                           |

|                     |                                                                                |
|---------------------|--------------------------------------------------------------------------------|
| L= Loyal and Liable | Halal is committed to its clients and guarantees excellent goods and services. |
|---------------------|--------------------------------------------------------------------------------|

Source: Azam et al. (2019)

### 2.3. HALAL INDUSTRY

The *Toyyiban* aspect of the *Halal* concept has drawn the attention of non-Muslim consumers around the world and made the Halal industry grow tremendously and becoming one of the fastest-growing markets globally. As of 2018, the market size of the global halal industry was US\$2.2 trillion (excluding US\$2.5 trillion worth Islamic finance) which was projected to reach US\$3.2 trillion by 2024 (Thomson Reuters and DinarStandard, 2019). However, this projection was affected by the hit of COVID-19 pandemic and has been revised as presented in Figure 2.1. The figure shows the updated (as of 2021) market size of different sectors of the halal industry globally and their respective projected market sizes by 2025. As of 2021, the total market size is US\$2.00 trillion, which has been forecasted to grow to US\$2.80 trillion by 2025. The figures indicate that the halal industry is growing rapidly, mainly due to the rising demand for halal products in both Muslim and non-Muslim countries.

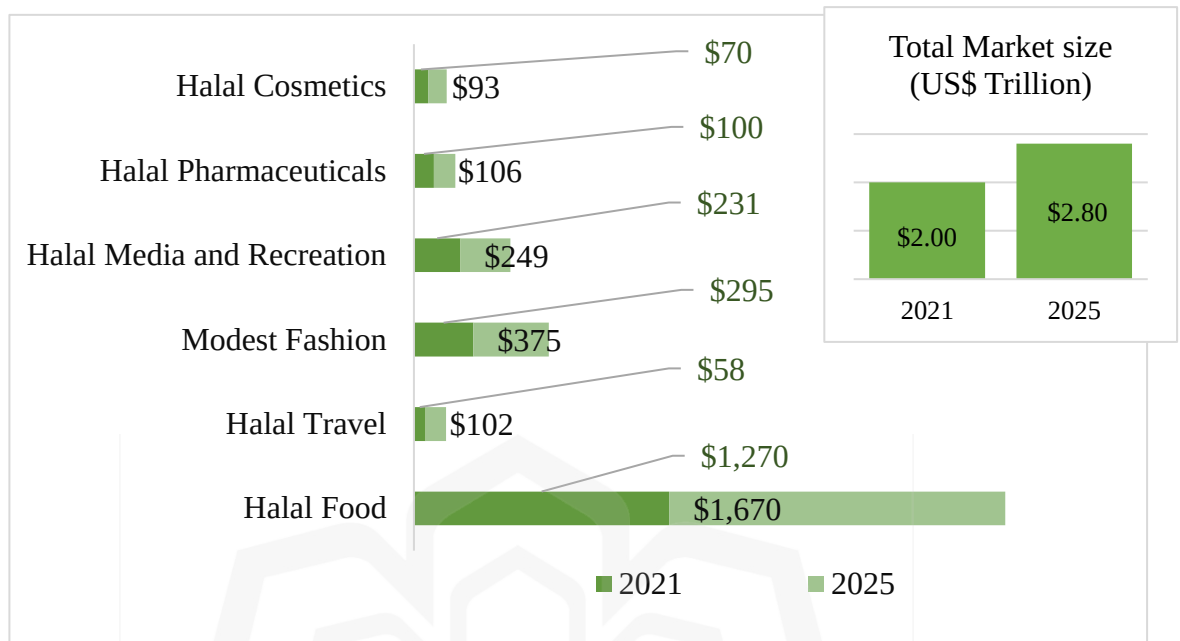


Figure 2. 1 Global halal industry sectors: Muslim spendings

Source: Dinar Standard (2022)

### Halal food industry

The biggest sector of the Halal industry is the Halal F&B industry. The steady growth of this sector over the last few years until now has been supported by the integration of the *Toyyiban* concept. Simultaneously, the sector has been expanded beyond the boundary of just religious slaughtering or halal meat to refer to halal foods. The nature of food production and the *sharia*'h requirements have created a greater spending chain and led the industry to certify items related to foods like ingredients, premises, food products, restaurants and so on.

As of 2021, the global Muslim spending on food was US\$1.27 trillion and projected to reach US\$1.67 trillion by 2025 (Figure 2. 1) with a 7.1 percent compound annual growth rate (CAGR). This spending was 15 percent of the total global spending



(US\$8.27 trillion) on F&B. Additionally, the adoption of the halal regulation has been extended to 52 countries where Malaysia is leading the 1<sup>st</sup> ranking position followed by Saudi Arabia holding the 2<sup>nd</sup> position in terms of GIEI score 2021/2022 (Dinar Standard, 2022).

The GIEI report 2021/2022 finds that the consumer demand on halal foods is increasing as reflected by the search for halal restaurants by tourists who want to dine-in. A number of mobile apps have been developed and introduced for the consumers to search for nearby halal restaurants that are registered on that particular app. For example, there about 200,000 subscribed users for the app Salam Planet across Denmark, Pakistan, and the UK. Recently the app has acquired Halal Dining Club which is another halal restaurant booking club based in the United Kingdom (UK) (Thomson Reuters and DinarStandard, 2019). Simultaneously, in Malaysia, Halal Apps is the mobile app launched in 2010 to look for halal-certified premises and restaurants. This is also the first app which is owned by the government in the Halal industry.

### **Halal restaurants**

According to the economic census 2016, the F&B sector of Malaysia had an annual growth rate of 5.1% with a total number of 167,490 establishments across the country. These establishments include hotels, all kinds of restaurants, lounges, cafeterias, pubs, clubs, bars, and services provided to hospitals, prisons, hostels, etc. (Department of Statistics Malaysia, 2017). The American dictionary defines restaurant as a place where the consumers can select their meals from more than one option and the selected meals would be prepared and served in the same place to dine-in for which the customers will be paying before or after eating.

The Halal Malaysia Official Portal provides a list of all certified F&B establishments that include both food premises and hotels and resorts. It does not provide any specific lists for the restaurants only. However, the definition of food premises under halal schemes by JAKIM is as follows-

*“any building or any structure, permanent or otherwise for the preparation, presentation, and sale of any food such as restaurants, food courts, cafeterias, bakeries, cake and pastry shop, fast food restaurants, franchise restaurants, canteens, kiosks, catering, hotel and other.”*

The definition of food premises by JAKIM includes all the restaurants in the F&B sector. Figure 2. 2 shows the number of certified halal food premises, hotels and resorts across different states of Malaysia. It can be realized that the maximum number of halal food premises is in Selangor state followed by Kuala Lumpur, and Johor in the third position. More than 54 percent of the food premises are located in these three states. The least number of halal food premises are located in Kelantan, Terengganu, and Putrajaya that comprise only 5 percent of total the total number (9757) of halal-certified food premises.

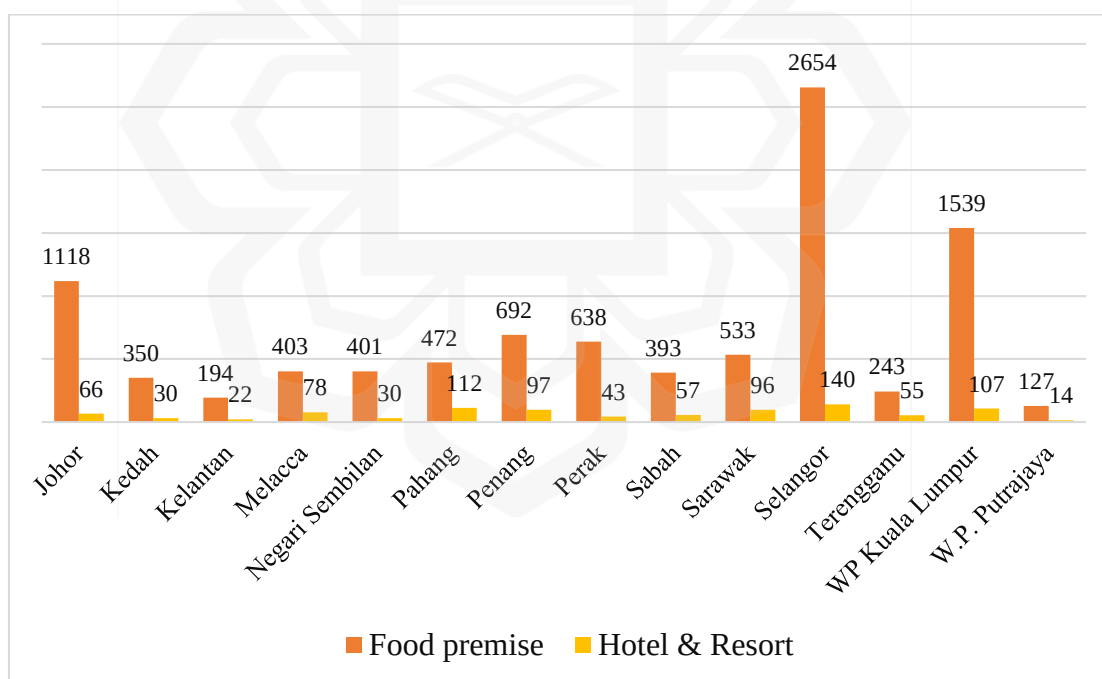


Figure 2. 2 Halal-certified food premises and hotel and resort across different states of Malaysia

Source: Halal Malaysia Directory; [www.halal.gov.my](http://www.halal.gov.my)

In this context, this research targets to conduct the survey amongst small and medium enterprises (SMEs) who run halal restaurants in Malaysia. The halal restaurant is referred to as those restaurants that have received the halal certificate by JAKIM. A similar term was used by the Global Islamic Economy (GIE) report by Thompson Reuters and Dinar Standard to refer to halal-certified restaurants. According to the report, restaurants play a major role to provide halal food services in the halal F&B industry and recently a number of apps have been introduced through which millions of restaurants have registered globally to offer halal food services. Additionally, Marzuki et. al, (2012) in their study, which was conducted in Malaysia, used similar terms and found 57 percent of the restaurants (out of total 643 surveyed restaurants) to be halal-certified across the country.

#### **2.4. MICRO, SMALL AND MEDIUM ENTERPRISES (MSMES)**

A significant percentage of total business establishments is represented by the MSMEs in most of the economies around the world, likewise in Malaysia. Micro, Small and Medium Enterprises (MSMEs) in Malaysia have been defined based on the criteria of sales turnover and number of employees. According to the definition, for the manufacturing sector, annual sales turnover is not more than RM50 million and the maximum number of employees is 200. However, for services and other sectors, the maximum number of employees is 75 and annual sales turnover should not exceed RM20 million. The detailed definition of MSMEs is presented in Table 2. 2.

Table 2. 2 Definition of SMEs in Malaysia

|        | Manufacturing           |                     | Services and other sectors |                     |
|--------|-------------------------|---------------------|----------------------------|---------------------|
|        | Sales turnover          | Number of employees | Sales turnover             | Number of employees |
| Small  | RM300,000 to < RM15 mil | 5 to <75            | RM300,000 to < RM3 mil     | 5 to < 30           |
| Medium | RM15 mil to ≤ RM50 mil  | 75 to ≤ 200         | RM3 mil to ≤ RM20 mil      | 30 to ≤ 75          |
| Micro  | < RM300,000             | < 5                 | < RM300,000                | < 5                 |

**Source:** *SME Corporation Malaysia* (n.d.).

The contribution of MSMEs to the economy of Malaysia is featured through their percentage of total establishments (99%), GDP contribution (38.9%), and employment (66.2%) in 2019 as illustrated in Figure 2.3. As of 2019 the total value of GDP contribution by MSMEs was RM586.9 billion. Additionally, MSMEs have employed more than 66 percent of the total workforce in Malaysia. While generating a significant number of employments, MSMEs had a 2.6% growth in export with a total export value of RM176.3 billion in 2019.

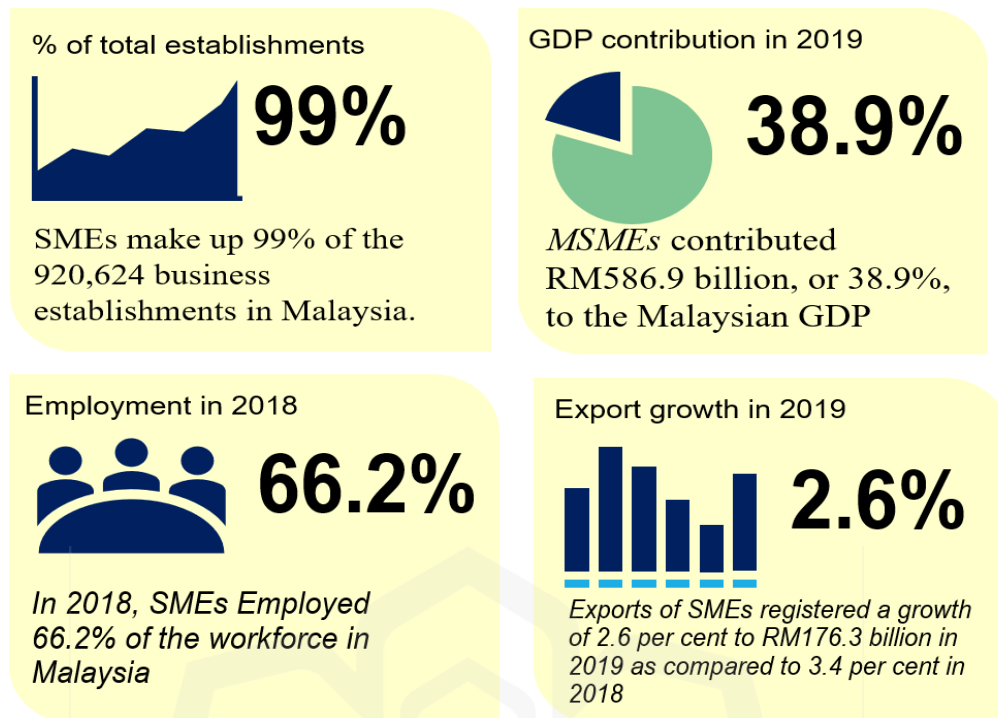


Figure 2.3 Contribution of MSMEs to the economy of Malaysia

Data Source: Department of Statistics Malaysia (2020)

Additionally, in recent times halal certification has become another important aspect of business profile for MSMEs, especially in Muslim countries. The number of Halal certificate applications by MSMEs is increasing every year as it has been now considered as the ticket to achieving consumer confidence, grow globally, as well as to improve sales strategies (Mohamed et al., 2014). According to Halal Development Corporation (HDC), as of January 2019, the total number of Halal certification in Malaysia is 10,205. The majority (91%) of the certification represents MSMEs as shown in Figure 2. 4.

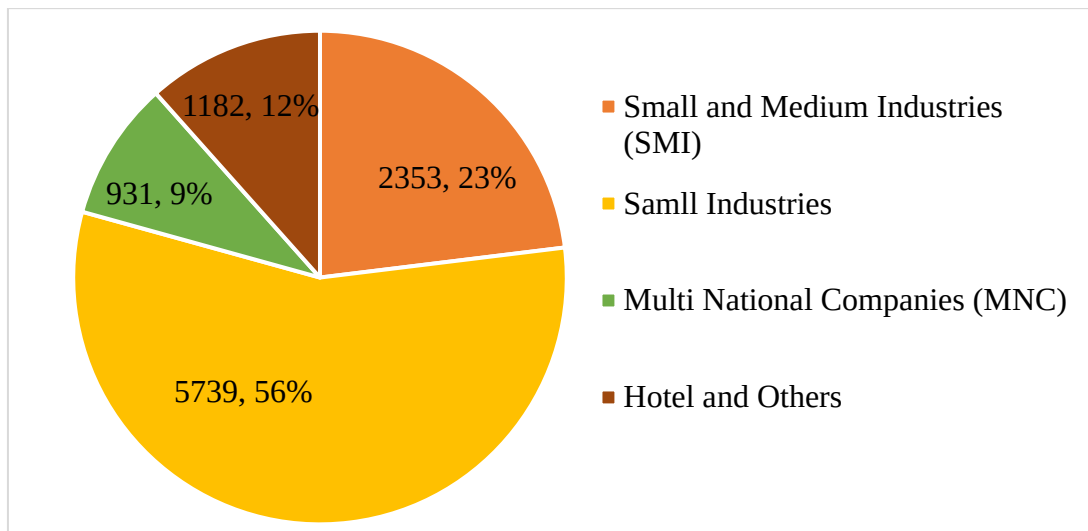


Figure 2. 4 Halal Certification Statistics in Malaysia

**Source:** Halal Statistics; Halal Development Corporation (HDC), Malaysia

## 2.5. MEASURING COMPONENTS OF HALAL COMPLIANCE RATING (HCR)

In this section, the existing standards and rating systems for the halal restaurant industry were looked at to help choose the components of the Halal Compliance Rating (HCR) to be used in this study. The reviewed standards and rating systems include the Malaysian Standard MS 1500:2019, the Food Hygiene Regulation 2009, the Current Muslim Friendly Hotel Rating System, the Malaysian Standard MS 2610:2015, the Malaysian Halal Management System (MHMS) 2020, the Clean, Safe, and Healthy (BeSS) Certification Malaysia, the ISO 22000 Food Safety Management System (FSMS), and previous research works. Such a review is significant to realise the dimensions of halal compliance that have been considered by the relevant halal standards and rating systems. Concurrently, previous research has shed light on the shortcomings of existing halal standards. This way of reviewing the literature enables the researcher to identify the crucial components of halal compliance practises in restaurants and make the final decision on the list of HCR components. Therefore, it is

important to review the available standards and systems in order to gain insight into the current landscape of halal compliance.

#### **2.5.1. Malaysian Standard, MS 1500:2019**

In the context of Malaysia, halal compliance has been defined by the Malaysian Standard, MS 1500:2019, Halal Food Production, Preparation, Handling, and Storage-General Guidelines (Third revision). The guidelines explain compliance as the fulfilment of the requirements as mentioned in clause 3 of the standard which shall be verified through site inspection. The MS 1500: 2019 for Halal Food considers eight different aspects relevant to halal foods to provide the requirements to ensure halal compliance by any business that uses or intends to use the halal logo. The eight different aspects are as follows-

- i. Management responsibility
- ii. Premises and equipment
- iii. Devices, utensils, machines, and processing aids
- iv. Hygiene, sanitation, and food safety
- v. Processing of halal food
- vi. Storage, transportation, display, sale, and serving of halal food
- vii. Packaging and labelling
- viii. Legal requirements

#### **2.5.2. Malaysian Standard MS2610:2015**

Malaysia has also developed standard for Muslim-Friendly Hospitality Services (MFHS) known as MS2610:2015. According to Islamic Tourism Centre of Ministry of Tourism, Arts and Culture Malaysia, the initiative of developing MFHS was started in 2012 by the International Institute for Halal Research and Training (INHART) and the Department of Standards Malaysia (DSM). Finally, the standard was published and released on January 2015 (Commercial Cooperation of the Organization of Islamic

Coperation (COMCEC), 2017). According to the standard, both general and specific requirements for MFHS certification are distributed into the following five main components.

- i. Management responsibilities
  - a. Personnel and responsibilities
  - b. Training
  - c. Documentation and storage
  - d. Communication
- ii. Accommodation: Rooms, F&B, public praying space, public washrooms, recreational and wellness facilities, etc.
- iii. Tour packages: Accommodation, ground transfers, product selection, itinerary, facilities, insurance coverage, etc.
- iv. Tour guide: credentials, code of conduct, appearance, Muslim friendly services, etc.
- v. Legal requirements

MS 1500:2019 is a Malaysian standard for Halal food production, preparation, handling, and storage. It specifies the general requirements for halal food and its supply chain. It is a revision of MS 1500:2009 that incorporates some changes and updates. MS 2610:2015 is also a Malaysian standard, but for Muslim-friendly hospitality services. It covers three areas: accommodation, tour operator, and tourist guide. It is based on ISO (International Organization for Standardisation) principles and adapts to the Malaysian environment (Jais, 2019).

The main difference between these two standards is that MS 1500:2019 focuses on Halal food, while MS 2610:2015 focuses on Islamic tourism. They have different scopes, objectives, and requirements. MS 1500:2019 can be considered as an essential part of MS 2610:2015 because it ensures that the food and beverages served to Muslim tourists are Halal and comply with Islamic principles. However, MS2610:2015 also covers other aspects of hospitality services that are not related to food and beverage, such as accommodation facilities, tour packages, and tourist guides. Therefore, MS



1500:2019 is not sufficient by itself to provide a complete Muslim-friendly hospitality service.

### **2.5.3. Food Hygiene Regulation 2009**

The halal certification process for restaurants and food premises becomes smoother and more flexible when the restaurant or food premises has a grade (A, B, C, or D) under the Food Hygiene Regulation 2009, issued by the Ministry of Health Malaysia. This is because a restaurant's grade is based on an evaluation of things like devices, utensils, machines, and processing aids; hygiene, sanitation, and food safety; and the way halal food is prepared, which is part of the process for getting halal certification. So, even having a grade of D would make the halal certification process smoother by identifying the shortcomings of the restaurant that caused it to have that grade. Fixing these problems before applying for a halal certificate would speed up the process of getting the certificate and make sure that a restaurant is ready to serve halal food. This regulation by the Food Safety and Quality Division under the Ministry of Health Malaysia (Food Safety and Quality Division and Malaysia, 2009) provides the requirements to be fulfilled by the restaurant operators under the following components-

- i. Food safety assurance program
- ii. Food traceability system
- iii. Management responsibilities
- iv. Premise location and design
- v. Premise: Cleanliness, pest control, hygiene, lighting, ventilation, food storage, changing room, furniture, wash basin, toilet, drainage facility, and disposal of waste.
- vi. Food handler: personal hygiene, clothing, health condition, training, and medical examination
- vii. Protection of food
- viii. Storage, packaging and labelling.

It can be seen that the grading system focus mainly food hygiene and safety aspects. Whereas, there other elements that must be considered by the restaurants to ensure quality, sustainability, and the requirements of halal standard.

#### **2.5.4. Crescent Muslim Friendly Hotel Rating**

CrescentRating is a travel consultancy that specialises in Halal travel. CrescentRating's mission is to enable Muslim travellers to explore the world with peace of mind by providing them with reliable information and services on Halal-friendly destinations, accommodations, attractions, dining options, and more. CrescentRating's standard for rating hotels is based on research and feedback from Muslim travellers and industry experts (Crescent Rating, n.d.). It covers various aspects of Halal, such as food preparation, prayer facilities, water-friendly washrooms, and services and facilities that cater to Muslim needs and preferences. CrescentRating also offers training and accreditation programmes for hotels and other travel service providers who want to improve their halal-friendliness. The rating process investigates different aspects of halal under the following four components to rate the halal compliance of any hotel (Crescent Rating, n.d.).

- i. Halal food facilities
- ii. Prayer facilities
- iii. Services during Ramadan, and
- iv. Level of non-halal activities in the hotel

#### **2.5.5. Malaysian Halal Management System (MHMS)**

Malaysian Halal Management System (MHMS) is the revised and latest version of Halal Assurance System (HAS) which was first introduced in 2011 by the Department of Islamic Development Malaysia (JAKIM). The system ensures the companies, that are applying for halal certification, always meet the requirements. This rating is only given to businesses that are willing to submit applications to JAKIM in order to get halal certification for their goods and/or services and comply with the organization's

requirements. The standards of MS1500 and the Manual Procedure for Malaysia Halal Certification (MPPHM) are the only criteria that may be used for grading, which is another constraint of this grading system. In addition, the grading system is not sector-specific; rather, it is a generic one that is used across the board in the halal business market. As a result, this grading method is not appropriate for conducting an in-depth review of halal compliance processes for a sector-specific firm such as halal certified restaurants that operate within the halal food and beverage industry. The grading criteria of MHMS 2020 are limited to few items as presented in Table 2. 3.

Table 2. 3 MHMS 2020 grading criteria

| Grade    | Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A</b> | <ul style="list-style-type: none"> <li>[1] Must be in complete accordance with the MHMS 2020 regulations and procedures.</li> <li>[2] The regular application for Malaysian Halal Certification yielded no conformance report (NCR) results.</li> <li>[3] Internal halal regulation is reliable.</li> <li>[4] Serves as an industry standard against which competing businesses may measure their own performance.</li> <li>[5] The company may be suggested for whitelisting and expedited processing and can be granted a certification term of up to five (5) years.</li> </ul> |
| <b>B</b> | <ul style="list-style-type: none"> <li>[1] Committed to adhering to the requirements of MHMS 2020 and, in general, the Halal Certification Procedure Malaysia.</li> <li>[2] NCR findings include minor flaws in the Certification application routine and Halal Malaysia.</li> <li>[3] Committed to improving internal halal control effectiveness.</li> <li>[4] Can be considered for the fast-track process, as well as whitelisted companies.</li> </ul>                                                                                                                        |
| <b>C</b> | <ul style="list-style-type: none"> <li>[1] Only partially complies with the MHMS 2020 requirements and procedures for Malaysian Halal Certification.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                    |

|          |                                                                                                                                                                                                                                                                                                                  |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | [2] NCR findings in the categories of minor minor flaws on the routine Halal Certification application Malaysia<br>[3] Lack of internal halal control is effective<br>[4] Not recommended for Whitelist or fast track processes.                                                                                 |
| <b>D</b> | [1] No MHMS documents have been developed.<br>[2] Non-compliance to a large extent with MHMS 2020 requirements and procedures for Malaysian Halal Certification.<br>[3] Internal halal control that is not effective.<br>[4] Companies are ineligible to be recommended for process fast track and whitelisting. |

#### **2.5.6. Clean, Safe, and Healthy (BeSS) certification Malaysia**

Another voluntary scheme in food service industry is the BeSS certification under the Ministry of Health (MoH). This recognition is to motivate food service providers to serve clean, safe, and healthy food to the consumers. About 6,000 food premises have been awarded with BeSS certification since 2013 which include school and university canteen, cafeteria, kiosk, and food trucks (Grace, 2019). The certification requirements are set under two main components which are, (A) safety and quality, and (B) Nutritional aspect. These two components further consider the following criteria to be assessed for any food premise to receive BeSS certificate.

- a) Clean premise: plant layout and facility, pest control, maintenance, operational control
- b) Safe food: personal hygiene and training, waste disposal, no hazard contamination
- c) Healthy food: healthier choice of foods, variety of options of healthy foods
- d) Nutritional aspect: disclosing the nutritional value of the foods. Preparing and serving the foods based on the appropriate serving size according to consumer needs and national guidance.

### **2.5.7. ISO 22000 Food Safety Management System (FSMS)**

ISO 22000 is a globally accepted standard which addresses aspects of food safety issues. It outlines the obligation for any organization or company in the food chain that is relevant to the food supply chain to show its ability to monitor food safety risks in order to guarantee that food is healthy at the time of human consumption. The standard sets its compliance requirements under the following core elements (ISO, 2018).

- a. Organizational context: Needs and expectations of the interested parties, scope of FSMS
- b. Leadership: Commitment, establish and communicating food safety policy, roles and responsibilities
- c. Planning: planning to address risks and opportunities, changes, and objectives of FSMS
- d. Support: Resources (infrastructure, people, workplace etc.), awareness, communication, documentation
- e. Operation: Prerequisites, traceability system, emergency preparedness and response, hazard control, and control of product and process non-conformities
- f. Performance evaluation: Monitoring, internal audit, management review
- g. Improvement: corrective actions, continuous improvement, and updating FSMS

However, all the core elements may not be applicable to restaurants since the standard is focused to manufacturers, producers, and business operators in food industry.

### **2.5.8. Existing research works**

Among all the standards and rating systems reviewed earlier, MS1500:2019 is the halal standard, which is specific to the food and beverage industry. While MS1500:2019

states the components of halal compliance and explains the requirements under each component, studies by previous research scholars have considered some additional components to investigate or examine the halal compliance and halal certification systems in Malaysia. The standard provides the minimum requirements for business companies in the F&B sector to get the halal certification and the licence to use the halal logo on the labelling of their products and services. To measure halal compliance and rate it accordingly, it is essential to identify and recommend the best practises in halal compliance. Many scholars studied and conducted research on factors that influence effective quality and food safety management. In this regard Table 2. 4 identifies the halal compliance components reviewing previous relevant studies.

Table 2. 4 Identifying components of halal compliance from previous relevant studies

| Source                       | Topic                                                                                             | Components of Halal Compliance                                                                                                                                                                                                                                                                                           |
|------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ahmad (2018)                 | Implementation of Halal Food Management System in Small and Medium Enterprises Food Manufacturers | <ul style="list-style-type: none"> <li>i. Resources/ Company attributes</li> <li>ii. Top management/ leadership</li> <li>iii. Employee/people</li> <li>iv. Education and training</li> <li>v. Process</li> <li>vi. Suppliers, and</li> <li>vii. External factors like consumers, regulations, and government.</li> </ul> |
| Baharuddin and Ismail (2018) | Halal compliance impact on organizational performance: The role of religiosity                    | <ul style="list-style-type: none"> <li>i. Halal and <i>toyyiban</i> practices</li> <li>ii. Internal process</li> <li>iii. Halal assurance system, and</li> <li>iv. Human resource capability.</li> </ul>                                                                                                                 |
| Noordin et al. (2009)        | Value chain of halal certification system: A case of the Malaysia halal industry                  | <ul style="list-style-type: none"> <li>i. Company profile</li> <li>ii. Ingredients used</li> <li>iii. Packaging and labelling</li> <li>iv. Production and process</li> </ul>                                                                                                                                             |

| Source                               | Topic                                                                                       | Components of Halal Compliance                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |                                                                                             | <ul style="list-style-type: none"> <li>v. HACCP, Good Hygiene Practice (GHP), Good Manufacturing Practice (GMP) certificate</li> <li>vi. Halal management team</li> <li>vii. Muslim workers</li> </ul>                                                                                                                                         |
| Zannierah et al. (2012)              | Restaurant managers' perspectives on halal certification                                    | <ul style="list-style-type: none"> <li>i. Knowledge on halal, Muslim dietary law, and practice of religion in workplace</li> <li>ii. Compliance to food hygiene regulations</li> <li>iii. Halal integrity in the supply chain, i.e., halal suppliers</li> <li>iv. Hygiene and safety of the premise</li> <li>v. Islamic environment</li> </ul> |
| Zannierah and Marzuki (2016)         | Halal Certification: A Viewpoint from Malaysian Restaurant Managers                         | <ul style="list-style-type: none"> <li>i. Cleanliness in food production, kitchen, restroom, and dining area</li> <li>ii. GHP, and food safety</li> <li>iii. Muslim dietary laws</li> <li>iv. Islamic atmosphere</li> </ul>                                                                                                                    |
| Razalli, Abdullah, and Yusoff (2013) | The Influence of Human factors in Halal Certification Process on Organizational Performance | <ul style="list-style-type: none"> <li>i. Management responsibility</li> <li>ii. Staff policy</li> <li>iii. Staff characteristics</li> </ul>                                                                                                                                                                                                   |

| Source                                            | Topic                                                                                               | Components of Halal Compliance                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rahman et al. (2012); Sorooshian and Dahan (2013) | A Review on factors of non-compliance of halal standards among restaurant operators in Kuala Lumpur | <ul style="list-style-type: none"> <li>i. Knowledge on halal</li> <li>ii. Implementation cost</li> <li>iii. Management responsibility</li> <li>iv. Supplier issues</li> <li>v. Customer satisfaction</li> <li>vi. Halal governance, and</li> <li>vii. Monitoring and enforcement</li> </ul>                                               |
| Salindal (2019)                                   | Halal certification compliance and its effects on companies' innovative and market performance      | <ul style="list-style-type: none"> <li>i. Raw material</li> <li>ii. Processing</li> <li>iii. Product innovation</li> <li>iv. Marketing</li> </ul>                                                                                                                                                                                         |
| Tan et al. (2019)                                 | A qualitative study of green practices adoption for restaurants in Malaysia                         | <ul style="list-style-type: none"> <li>i. Water and energy efficiency and conservation</li> <li>ii. Practice of recycling and compositing</li> <li>iii. Use of sustainable, local, and organic foods</li> <li>iv. No toxic and chemical products</li> <li>v. Sustainable furnishing and building materials (for new buildings)</li> </ul> |
| Fatimah et al. (2011)                             | Foodservice hygiene factors-The consumer perspective                                                | <ul style="list-style-type: none"> <li>i. Food quality: price, taste, variety, nutritional value</li> <li>ii. Location</li> <li>iii. Hygiene and cleanliness</li> <li>iv. Image</li> <li>v. Environment</li> <li>vi. Service quality: waiting time, operating hour, addressing issues, etc.</li> </ul>                                    |



Most of these studies were conducted in the context of Malaysia. These studies suggest that the components of halal compliance should consider variables like consumer knowledge and awareness, supplier selection, good hygiene practice (GHP), customer satisfaction, green practices, working environment and culture, and a food safety management system.

#### 2.5.9. Identified components of HCR

From 2.5.1 to 2.5.7, the parts of compliance are looked at by looking at the different rating systems and standards that apply to the halal industry. Additionally, Section 2.5.8 looks at the parts of halal compliance from a number of studies done by different researchers in the past. The following components (Table 2.5) have been identified as being considered for the best practises of HCR in restaurant chains for the current study based on this extensive investigation.

Table 2. 5 Selected best HCR components of best halal practice and research code

| No. | HCR components                                                                                                                                                                                                |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [1] | <b>Knowledge on halal and <i>toyyib</i>:</b> knowledge on critical ingredients, halal and <i>toyyib</i> , cleanliness and processing                                                                          |
| [2] | <b>Management responsibility:</b> training, internal halal committee, documentation and storage, and communication                                                                                            |
| [3] | <b>Premise:</b> location and design, prayer facility, water friendly toilet                                                                                                                                   |
| [4] | <b>Hygiene and food safety:</b> GHP grading, cleanliness, pest control, hygiene, lighting, ventilation, food storage, changing room, furniture, wash basin, toilet, drainage facility, and disposal of waste. |
| [5] | <b>Human resources and culture:</b> personal hygiene, clothing, health condition, training, code of conduct, appearance, Muslim workers, Muslim friendly services, and medical examination                    |
| [6] | <b>Branding, packaging and labelling:</b> name of the restaurant, design, halal marketing, packaging for home delivery, storage                                                                               |

|      |                                                                                                                                                                           |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [7]  | <b>Image and customer satisfaction:</b> online review (if any), customer feedback, online presence on halal apps and web pages                                            |
| [8]  | <b>Legal requirements:</b> local licensing, and other certifications and documents                                                                                        |
| [9]  | <b>Green practice and sustainability:</b> water and energy efficiency and conservation, recycling and compositing, no toxic or chemical product, local and organic foods. |
| [10] | <b>Halal supply chain:</b> storage, halal suppliers, dedicated vehicles, transportation, etc.                                                                             |

The components have been selected based on their most frequent appearances in different standards, rating systems, and previous research works. For example, one of the dimensions in all the standards and previous studies was the responsibility of management. Several sub-dimensions, such as training staff, forming the internal halal committee (IHC), preparing the halal file, documenting and storing it, and communicating with different stakeholder groups, have been used to show how important this component is. The overall theme (Management Responsibility) of the component was adopted from MS1500:2019.

Some other components that have been adopted from MS1500:2019 are premises, hygiene and food safety, legal requirements, and halal supply chains. Even though the theme of these components came from the MS1500:2019 standard, other standards and studies have shown how important they are by mentioning different requirements and activities under each of the components, as shown in Table 2.5. These sub-dimensions are necessary to ensure halal compliance and demonstrate that the organisation is operating in accordance with the principles of halal management.

Studies (Zannierah et al., 2012; Rahman et al., 2012; Sorooshian and Dahan, 2013) have also pointed out that the people who run the business should know about important ingredients (halal and *toyyib*), cleanliness, processing, and other things related to halal compliance. Because of this, the researcher came up with the "knowledge of halal and *toyyib*" component.

While Tieman (2017) emphasised branding to reflect the values of a halal business, Adura Mohd Yusoff et al. (2015) and the Department of Standards Malaysia (2014) highlighted that packaging should be designed to convey the halal status of the products clearly and accurately. Simultaneously, MS1500:2019 provides guidelines on packaging materials and labelling requirements. Thus, present research identifies "branding, packaging, and labelling" as one essential component of halal compliance assessment.

Baharuddin and Ismail (2018) also talked about how important it is to be able to train people, offer services that are friendly to Muslims, and have Muslim staff available. Hall and Ballantine (2012) and Zannierah and Marzuki (2016) both said that a work culture that reflects Islamic morals is important. This culture could be based on how healthy the staff is, how well they know about halal and Muslim-friendly services, how they act, and how they look (Ahmad, 2018). So, the "human resources and culture" component was chosen as a key HCR component for this study.

Moreover, none of the halal standards or rating systems took a business's reputation or how happy its customers were into account. However, according to Fatimah et al. (2011) and Sorooshian and Dahan (2013), these aspects are vital to the success of the halal certification programme as they help protect the brand image and reputation of certified businesses. Such importance is further supported by other studies (Ahmed, 2018; Rahman et al., 2012). Therefore, to measure halal compliance performance, "image and customer satisfaction" was adopted as one of the HCR components for the present research.

Similar to the two components mentioned earlier, green practises and sustainability are other dimensions that have been overlooked by MS1500:2019. This aspect, however, can be seen in food hygiene regulations, good hygiene practises, Muslim-friendly hotel rating standards, and some other studies (Kamisah et al., 2018; Razalli et al., 2012) in terms of reducing water use, using eco-friendly materials, practising the 3 R's (recycle, reuse, and reduce), efficient water and energy management, and so on. Hence, "green practises and sustainability" has been identified as another inclusion in the halal compliance rating system of this research.

## **2.6. PERFORMANCE APPRAISAL AND EXISTING COMPLIANCE RATING SYSTEMS**

Performance appraisal refers to such a management system where the performance of an individual or an organization is evaluated relative to a certain standard (Macwan and Sajja, 2013). Such actual evaluation against certain standards or requirements provides the individuals or organizations feedback that helps respective participants improve their performance (Dessler, 2000). There are a number of methodologies that are used for conducting performance appraisal. Methods like as self-evaluation, 360-degree feedback, management by objective, behavioural and/or psychological appraisal, and the assessment centre approach are only a few examples. The method of ranking and rating scale is used to appraise an institution or organisation such as us, universities, hotels, business companies, and others. All of these methods are applied to the assessment and appraisal of individuals (employees), institutions and organisations.

The most widely used method of measuring performance appraisal is the Fuzzy logic, a powerful problem-solving methodology (Macwan and Sajja, 2013). Yee and Chen (2009) used the Fuzzy method in their study to deal with rating appraisal of employees in terms of a number of factors like working output, knowledge and skills, personal quality, and informal events and contribution. However, the wider application of this methodology also involves evaluating an organization's performance against certain standards. For example, Yousif and Shaout (2018) used the Fuzzy logic computational model to evaluate the performance of the universities in Sudan and categorize them. Additionally, the method has also been used to evaluate the change management process in the context of sustainability and rate as high, medium, and low (Vlasenko et al., 2019).

One of the several approaches of the Fuzzy method is the weighted average approach (Chang and Hung, 2005; Guh et al., 2008). The approach involves three operations. Firstly, the scoring on the performance achieved by the respondents under each factor. Secondly, the weighting that reflects the relative importance of each attribute for a group of relevant factors. And finally, the aggregating which is the

perception function of decision making in making a final decision (Guh et al., 2008). Chang and Hung (2005) expressed the approach as the following function which consists of fuzzy addition, multiplication, and division.

$$M = \frac{\sum_{i=1}^n W_i . A_i}{\sum_{i=1}^n W_i}$$

Where,

$M$  is the membership function

$W$  is the weightage of each group of relevant factors, and

$A$  is the achieved score for each factor

The weighted average method is also known as weighting-rating-calculating method of multi-criteria decision making. The Analytic Hierarchy Process (AHP) technique is one of the most popular forms of multi-criteria decision making for rating compliance performance that applies the weighted average method (Schöttle and Arroyo, 2017). In this regard, this method has been used by Røtterud et al. (2020) in hygiene performance rating as an auditing scheme for performance appraisal of slaughter hygiene. Additionally, Olabanji and Mpofu (2020) used both Analytic Hierarchy Process (AHP) and the weighted average method for identifying optimal design concept in their research.

It has been realised that the weighted average approach has been widely used in many rating systems globally. The subsections that follow examine existing relevant rating systems that use a weighted average approach to rate compliance performance against respective standards and regulations. The different rating systems that are reviewed include the Crescent Muslim Friendly Hotel Rating System, the Muslim Friendly Hotel Rating System, the Global Islamic Economy Indicator (GIEI) score, the online movie rating system, and compliance rating methods in other industries. Such reviews of different rating systems provide an insight on the application of the weighted-average approach in developing a rating system.

### **2.6.1. Crescent Muslim Friendly Hotel Rating System**

The preceding section examined this rating system to identify the components of halal and Muslim-friendly hotel ratings. In this section, we investigate different scoring methods that have been used while applying a weighted average approach to rating a hotel. Crescent rating system is the most widely used rating system until now in 13 different fields of Halal/Muslim travel, tourism and hospitality. As part of performance appraisal method, this system uses a numerical rating of 1 to 7 to rate the Muslim friendly hotels based on the halal compliance level practices by the hotel management. The four different criteria that are considered to assess the halal compliance level are halal food facilities, prayer facilities, services during Ramadan, and level of non-halal activities in the hotel. The numerical rating of Muslim Friendliness is further categorized three labels namely, Helpful (1,2, and 3), Accommodates (4 and 5), and Specialized (6 and 7) (Source: <https://www.crescentrating.com/rating-accreditations/hotels.html>).

### **2.6.2. Malaysia Standard for Muslim-friendly hotel rating (MS 2610:2015)**

Malaysia has also developed a standard for Muslim-Friendly Hospitality Services (MFHS), known as MS 2610:2015. The initiative to develop MFHS was started in 2012 by the International Institute for Halal Research and Training (INHART) and the Department of Standards Malaysia (DSM). Finally, the standard was published and released in January 2015. The main objectives of the MS 2610:2015 standard are to provide guidance and implementation measures for hospitality service providers to ensure that the services provided are in line with Islamic principles. The Standard and Industrial Research Institute of Malaysia (SIRIM) offers a Muslim-Friendly Hospitality Management System Certification based on the MS 2610 standard that covers various aspects of hospitality services for Muslim guests. The certificate is provided based on rating score against the compliance of the legal requirements, six general requirements, and four specific requirements as mentioned in MS2610:2015. The rating system also applies the weighted average approach for performance appraisal. (Commercial Cooperation of the Organization of Islamic Cooperation (COMCEC, 2017).

### **2.6.3. Global Islamic Economy Indicator (GIEI) score**

It has been more than seven years since Thompson Reuters and Dinar Standard began the practise of issuing an annual report on the Global Islamic Economy. The report includes an in-depth analysis of the worldwide halal business, which is representative of the Islamic economy on a global scale. It assigns a score out of 100 to 73 nations and ranks the top 15 economies in six distinct sectors (food and beverages, travel and tourism, cosmetics, pharmaceuticals, modest fashion, and media and recreation) of the halal industry throughout the world. In order to produce such a rating, the study utilises the composite weighted technique for each of the 49 essential variables. The metrics are weighted according to four main components, which are governance, awareness, supply and demand, and social factors respectively. When determining a country's overall rating, a weighted score is tallied for each of the indicators that are used in the methodology of performance appraisal (Thomson Reuters and DinarStandard, 2019).

### **2.6.4. Online movie rating system**

The online reviews and ratings have a great influence on the consumers, especially millennials, for choosing their intended products and/or services (Mangold and Smith, 2012). One of the most common cases in this digital world is movie rating. The weighted average method is a way of calculating the overall rating of a movie based on the ratings given by different users or critics. The idea is to give more weight to some ratings than others, depending on how reliable, relevant or representative they are. Three most popular and recognised movie rating websites are *IMDb*, *MovieLens*, and *Rotten Tomatoes* that use the application of average scoring method for rating movies. The scores are aggregated and averaged from the certified reviewers, critics and online viewers (Allahbakhsh and Ignjatovic, 2015). Different websites may use different formulas or criteria to assign weights, but the general steps are:

- 1) For each movie, collect all the ratings given by users or critics.
- 2) For each rating, multiply it by a weight factor that reflects its importance or similarity to the target user.

- 3) Sum up all the weighted ratings and divide by the total number of ratings (or weights) to get the weighted average rating.
- 4) Sort the movies by their weighted average ratings and display them to the user.

### 2.6.5. Compliance rating tools in other industries

Leadership in Energy and Environmental Design (LEED) method of sustainability rating is one of the most popular rating systems globally. The method also uses weighted average approach to rate an establishment based on a total of 69 scores distributed amongst six different categories. Simultaneously, the benchmark in sustainability rating globally is the Building Research Establishment Environmental Assessment Method (BREEAM) assessment method. BREEAM uses a system of ‘credits’ in eight different areas of sustainability. The method adopts three types of weighting for all the eight areas of sustainability (Table 2.6). For each sustainability section, it is the assessor who determines the credits for the respective sections based on the assessment issues. The percentage of credits achieved in each section is then multiplied by the corresponding weighting. Adding up all the section scores together gives the total BREEAM score which is then compared to the benchmark. An example is given in Table 2. 6 and Table 2. 7.

Table 2. 6 BREEAM Weighting for the different environmental section.

*Source: BRE Global Ltd (2016)*

| Sustainability Section | Weighting        |            |                     |
|------------------------|------------------|------------|---------------------|
|                        | Fully fitted out | Shell only | Shell and core only |
| Management             | 12%              | 12.5%      | 11%                 |
| Health and well being  | 15%              | 10%        | 10.5%               |
| Energy                 | 15%              | 14.5%      | 15%                 |
| Transport              | 9%               | 11.5%      | 10%                 |
| Water                  | 7%               | 4%         | 7.5%                |



|                      |       |       |       |
|----------------------|-------|-------|-------|
| Materials            | 13.5% | 17.5% | 14.5% |
| Waste                | 8.5%  | 11%   | 9.5%  |
| Land use and ecology | 10%   | 13%   | 11%   |
| Pollution            | 10%   | 6%    | 11%   |
| Total                | 100%  | 100%  | 100%  |

Table 2. 7 BREEAM Score and Rating Calculation Example

Source: BRE Global Ltd (2016)

| <b>BREEAM<br/>Section</b> | <b>Credits<br/>achieved</b> | <b>Credits<br/>available</b> | <b>% Of<br/>Credits<br/>achieved</b> | <b>Section<br/>weighting</b> | <b>Section<br/>score<br/>(%)</b> |
|---------------------------|-----------------------------|------------------------------|--------------------------------------|------------------------------|----------------------------------|
| Management                | 10                          | 22                           | 45.45                                | 0.12                         | 5.45                             |
| Health and<br>well being  | 8                           | 10                           | 80.00                                | 0.15                         | 12.00                            |
| Energy                    | 16                          | 30                           | 53.33                                | 0.19                         | 10.13                            |
| Transport                 | 5                           | 9                            | 55.56                                | 0.08                         | 4.44                             |
| Water                     | 5                           | 9                            | 55.56                                | 0.06                         | 3.33                             |
| Materials                 | 6                           | 12                           | 50.00                                | 0.125                        | 6.25                             |
| Waste                     | 3                           | 7                            | 42.86                                | 0.075                        | 3.21                             |
| Land use and<br>ecology   | 5                           | 10                           | 50.00                                | 0.10                         | 5.00                             |
| Pollution                 | 5                           | 13                           | 38.46                                | 0.10                         | 3.85                             |
| Innovation                | 2                           | 10                           | 20.00                                | 0.10                         | 2.00                             |
| Total                     |                             |                              |                                      |                              | 55.68%                           |

It has been realised from this section of the literature review that the weighted average method is one of the common approaches used in the existing compliance rating systems. However, some shortcomings of the weighted average method in a rating

system are that it may not reflect the true importance of each attribute, it may ignore some non-performance costs, and it may produce biased results depending on how the weights are assigned (SCRC SME, 2011). In this regard, a better approach to using weighted averages in rating systems that uses a systematic and mathematical method to compare and prioritise alternatives based on multiple criteria is needed. It should also allow for constructing a global threshold that can help evaluate the performance of each alternative. An alternative method, such as the analytic hierarchy process (AHP), has been proposed and used in some rating systems to overcome these shortcomings. This method allows for more flexible weighting and can account for non-performance costs and inconsistencies in the rating data. The following section reviews the application of AHP in the ranking and rating methodology.

## **2.7. RANKING AND RATING METHODOLOGY**

There are many types of ranking and rating systems that can be observed in different fields of the economy. For example, investment ranking, product or service ranking, university or school ranking, employee ranking, country ranking, credit rating, hotel rating, movie rating, and many more. The earlier section reviews existing compliance rating systems in the economy. The most common statistical method in these ranking and rating systems is the “weighted average” approach. Taking this approach as the basis (Song and Kang, 2016), the Analytic Hierarchy Process (AHP) has become the advanced and one of the most popular methods of ranking and rating systems in the economy (Islam and Madkouri, 2018). The significance of all the components, that have been identified earlier (Table 2. 5), for measuring halal compliance is not equal. One is more or less important over another. Therefore, the weightage of each component will also vary. To distribute the weightage over all the selected components fairly and with justification, the most widely used tool is the Analytic Hierarchy Process (AHP). The following review of literature provides an explanation of the and use of AHP and justifies the application of this tool in present research.

### 2.7.1. Analytic Hierarchy Process (AHP)

Analytic Hierarchy Process in short AHP is a theory developed and introduced by Saaty (1980). It is considered to be one of the most effective tools in Multiple Criteria Decision Making (MCDM) process (Soberi and Ahmad, 2016). AHP deals with pairwise comparison to prioritize multiple criteria by assigning weights in a decision-making process. This process is widely used to make a decision of selecting one best option from a multiple alternative where each alternative has multiple criteria to evaluate. The model constitutes of three hierarchy levels starting with the main goal as level-1 followed by criteria to determine as level-2, and finally the alternative (Figure 2. 5).

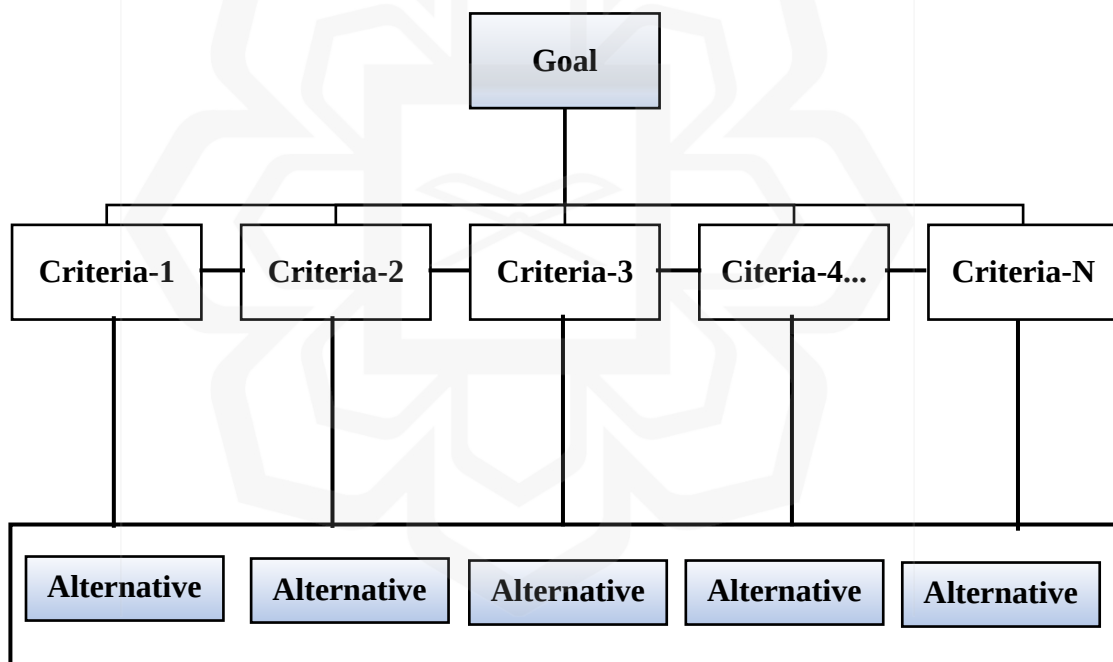


Figure 2. 5 Three Levels of AHP (Saaty, 2001)

AHP tool includes creating pairwise comparisons between the selected components to identify priority weights along with evaluating the relative ranking of various HCR components considered in the study. The second level of the process involves prioritising the criteria or different components by assigning a certain percentage of weights by multiple expertise in relevant fields (Singh et al., 2020). The

reason of involving multiple expertise in the weighing phase is to ensure the consistency in the weightage of each components (Vaidya and Kumar, 2006). The application of AHP method in MCDM can be observed in many industries by a number of previous studies. Overall, AHP is a versatile tool that can be applied to a wide range of ranking and rating systems in different industries and contexts. It is particularly useful for situations where multiple criteria need to be considered in the decision-making process. Table 2. 8 shows some of the many examples of the application of AHP method in different industries.

Table 2. 8 Application of AHP method in previous research works

| No. | Reference                                                                                                 | Application area of AHP method                                                              |
|-----|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 1.  | Ayhan and Özdemir (2022; Murat et al. (2013); Rad et al. (2011).                                          | University ranking systems                                                                  |
| 2.  | Ishizaka et al. (2019); Kannan (2010); Míguez et al. (2023)                                               | Hotel ranking and rating systems                                                            |
| 3.  | Ünal and Güner (2009); Yunus et al. (2013); Wolnowska and Konicki (2019); Abishini and Karthikeyan (2022) | Product ranking systems                                                                     |
| 4.  | Silva et al. (2020); Oyatoye et al. (2010); Hota and Kumar (2015)                                         | Investment portfolio ranking systems                                                        |
| 5.  | Raja et al. (2021); Lidinska and Jablonsky (2018)                                                         | Employee performance evaluation and ranking systems                                         |
| 6.  | Singh et al. (2020)                                                                                       | To select and weight the best attributes of green manufacturing                             |
| 7.  | Hidayatullah (2019)                                                                                       | Sustainable housing and residence rating system                                             |
| 8.  | Muralidhar (2012)                                                                                         | Weighting and prioritizing the measurement criteria of sustainable supply chain management. |

|     |                                 |                                                                                                                                     |
|-----|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 9.  | Soberi and Ahmad (2016)         | Prioritising the seven criteria of selecting the best improvement strategy to save time in cleaning process of drilling router jig. |
| 10. | Ouma et al. (2015)              | Prioritising decision-making criteria for road pavement maintenance                                                                 |
| 11. | Stevic et al. (2017)            | Selecting and weighting the most important criteria for supplier selection in transport and logistic for construction               |
| 12. | Lee and Park (2019)             | Identifying weights of components and factors of landscape sustainability assessment.                                               |
| 13. | Fashoto et al. (2018)           | Selecting and prioritising the criteria for appraising the academic staff performance in a university.                              |
| 14. | Vyas at al. (2019)              | Prioritising the weight of nine green building components to develop green building assessment tool                                 |
| 15. | Zhou et al. (2019)              | Ranking the weights of six identified indicators of green supply chain management practices                                         |
| 16. | Yuen (2014)                     | Ranking the weights of five criteria to measure the new product development strategy                                                |
| 17. | Luthra et al. (2013)            | Identifying and ranking of strategies to implement green supply chain management in manufacturing industry                          |
| 18. | Nusran et al. (2019)            | Priority scoring of five influencing resources of supply chain management in beef-based agroindustry.                               |
| 19. | Rakhmawati and Fajriyadi (2019) | Determining the weights of five fields of searching halal foods.                                                                    |

|     |                                                  |                                                                                                      |
|-----|--------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 20. | Purnomo, Pujiyanto, Bunyamin, and Lesmana (2018) | Mapping and measuring halal critical points of chicken slaughterhouse and marketing of chicken meat. |
|-----|--------------------------------------------------|------------------------------------------------------------------------------------------------------|

From the review of previous studies on the application of AHP, as presented in Table 2. 8, it is discovered that the AHP method has been used in many fields that include the real estate industry, academic institutions, green manufacturing, supply chain management, construction, logistic management, landscape management, sustainable build environment, project management, new product development, and the halal food and meat industry. The areas of application of AHP include many other fields of business and economics. The examples presented in Table 2. 8 justify the use of the AHP method in the present study to measure the weights of HCR components as well as to rank and rate halal-certified restaurants in Malaysia. In this regard, Islam (2003) and Saaty (2001) recommended the absolute measurement approach of AHP for ranking and rating methodology. Following the recommendation, the present study opted to adopt the absolute measurement approach of AHP in assessing the performance of halal-certified restaurants in Malaysia.

Moreover, there are few justifications, given by the scholars, on the use of absolute measurement approach of AHP. First advantage is the combination of rating intensities and ideal synthesis (i.e., the relative measurement) that makes the AHP method more accurate and reliable (Saaty, 1986, 2001). Another advantage is the capacity of adding large number of alternatives in the rating process (Islam, 2003; Salomon, 2016). Finally, the ability of ranking a large number of alternatives (DeFelice and Petrillo, 2013; Salomon, 2016).

## 2.8 LINGUISTIC EXPRESSION OF DIFFERENT RATINGS

Once the performance has been calculated and rated, the numerical rating can be expressed through stars or linguistically in a number of ways. Linguistic expression is an important aspect of the rating system because it allows businesses communicate their

compliance performance against certain standards in a clear and concise way, which can be useful for a variety of different purposes. Simultaneously, it allows auditing entities to provide detailed and nuanced feedback about their observations with a product or service, which can be useful for both the company that produced the product and consumers who may be considering purchasing it (Dillon et al., 2021).

Moreover, converting numerical ratings to linguistic ratings, also known as verbal labels or descriptors, can make it easier for people to understand and interpret the ratings. This is because people tend to find it easier to understand words and phrases than numbers (Lee et al., 2021). For example, if a product or service is rated on a scale of 1 to 5, it may be difficult for some people to understand what the difference is between a rating of 2 and a rating of 3. However, if the ratings are converted to linguistic labels such as "poor", "fair", "good", "very good", and "excellent", it becomes easier for people to understand the relative quality of the product or service.

Verbal labels can also be useful when presenting ratings to a diverse audience with different levels of numeracy or language skills. Using linguistic labels can help to ensure that the ratings are understood by everyone, regardless of their background or education. Overall, converting numerical ratings to linguistic labels can help to improve the clarity and interpretability of the ratings, making them more useful and easier to understand for a wide range of audiences. Perform (2019) stated several examples in his web article which is presented in Table 2. 9.

Table 2. 9 Examples of linguistic expression of the numerical rating scale

| Rating Organization                                           | Linguistic Rating and Scale                                                                                                  |
|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Berkeley human resources department, University of California | 5- Exception (E); 4- Exceeds expectations (EE); 3- Meets expectations (ME); 2- Improvement needed (I); 1- Unsatisfactory (U) |

|                                |                                                                                                                                          |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Huntington Ingalls             | 5- Far exceeds (E); 4- Exceeds expectations (EE); 3- Meets expectations (ME); 2- Development required (DR); 1- Improvement required (IR) |
| Harvard                        | 5- Leading; 4- Strong; 3- Solid; 2- Building; 1- Not meeting expectations                                                                |
| Press Ganey Associates LLC, US | 5- Very good; 4- Good; 3- Fair; 2- Poor; 1- Very poor                                                                                    |

At this point, it is clear that businesses and service providers need a way to talk about rating scores in language, and the five-point rating scale is widely used. Because having a language is so important, it's important to find out what language ratings are available in restaurants and other parts of the halal industry. So, the next sections (2.8.1 to 2.8.5) look at how ratings are expressed in different languages. These include the restaurant hygiene rating system in Malaysia, the Malaysia halal management system (MHMS), restaurant ratings around the world, Muslim-friendly hotel rating systems globally, and the leadership in energy and environmental design (LEED).

### **2.8.1. Restaurant hygiene rating system in Malaysia**

Malaysia has a grading system for the restaurants under the Food Hygiene Regulations (FHR) 2009. FHR was established to ensure that the consumers are free from food-borne diseases, and they are served with safe and quality foods. The restaurants are graded from the inspection and scoring against 100 cleanliness points under nine major aspects. The final grading is expressed as 'A' (for 86-100 points), 'B' (71-85 points), 'C' (51-70 points), and 'D or No grade' (less than 50 points). Restaurants that score 'D' are given notice for immediate shut down (Just and Show, 2019).



### 2.8.2. Malaysia Halal Management System (MHMS)

MHMS 2020 evaluates the halal compliance practices against the requirements specified in the document (JAKIM, 2020). The compliance level is graded at four levels, as described in Table 2. 10. Compliance with halal standards is graded from A (very satisfying) to D (absolutely not satisfying): A denotes 86%-100%, B (66%-85%), C (41%-65%), and D (less than 40%). However, this grading is applied to only those companies that are willing to apply for and get halal certificates from JAKIM for their products and/or services. Another limitation is that the criteria for rating are limited to the requirements of MHMS 2020 and the Manual Procedure for Malaysia Halal Certification (MPPHM). Moreover, the grading system is a general one that is applied to all sectors of the halal industry and is not specific. Thus, this is not a suitable grading system for an in-depth assessment of halal compliance practices for a sector specific company like halal certified restaurants in the halal F&B industry.

Table 2. 10 Halal compliance grading criteria: MHMS 2020

Source: JAKIM (2020)

| Halal compliance level    | Grade    | Grading range |
|---------------------------|----------|---------------|
| Very satisfying           | <b>A</b> | 86% to 100%   |
| Satisfying                | <b>B</b> | 66% to 85%    |
| Unsatisfying              | <b>C</b> | 41% to 65%    |
| Absolutely not satisfying | <b>D</b> | $\leq 40\%$   |

### 2.8.3. Restaurant ratings globally

There are a number of different restaurant rating systems that are used around the world. For example, Michelin Guide, Zagat, Yelp, TripAdvisor, Google Maps, etc. There are many other restaurant rating systems in use around the world, and the specific system used may vary depending on the country or region. A recent study on gastronomy

tourism by Bertan (2020) reviewed a number of restaurant rating systems that are most popular across the world. Table 2.11 identifies the linguistic expression used by these rating systems.

Table 2.11 Linguistic expression of different restaurant rating systems globally

| Name of the rating system                                | Rating expression                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Micheline guide of restaurant ranking (International) | <b>Star rating (1 to 3):</b><br>a. One Star = ‘Very good cooking, worth a stop’<br>b. Two Star = ‘Excellent cooking that worth a detour’<br>c. Three Star = ‘Exceptional cooking that worth a special visit’                                                                                                                                                                                                                                                                                 |
| 2. La liste restaurant rating (International)            | Restaurants are scored out of 100 and then ranked based on “ <b>trustworthiness index</b> ” from 0 to 10 where ‘0’ implies ‘not to be trusted at all’, and ‘10’ implies ‘very trustworthy’.                                                                                                                                                                                                                                                                                                  |
| 3. The world’s best 50 restaurants (International)       | Ranking from number one (1) to number fifty (50) based on the votes from food experts, consumers, food writers, and travellers.                                                                                                                                                                                                                                                                                                                                                              |
| 4. Gault Millau guide of restaurant ranking (Europe)     | Ratings are based on a point from 1 to 20 the listing is done only for those restaurants that achieve points between 10 to 20, and the scores are expressed as follows-<br>a. 19-20 points get 4 chef’s hats and expressed as exceptional.<br>b. 17-18 points get 3 chef’s hats and expressed as excellent.<br>c. 15-16 points get 2 chef’s hats and expressed as very good.<br>d. 13-14 points get 1 chef’s hats and expressed as good.<br>e. 10-12 points are expressed as average ranking |

| Name of the rating system                              | Rating expression                                                                                                                                                                                           |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5. The Good Food Guide of restaurant ranking (England) | Restaurants are rated on a point scale of 1 to 10 where the ranking is done from the consumers' feedback, and assessment from experts like writers, critics of food industry, restaurant owners, and chefs. |

#### 2.8.4. Muslim friendly hotel rating system globally

There are several Muslim friendly hotel rating systems that are well-recognised and becoming popular day by day. Table 2.12 presents some of these systems reported by the Commercial Cooperation of the Organization of Islamic Cooperation (COMCEC) (2016). All these rating systems adopts the star rating system where the stars are ranging from minimum 1 (one) star to maximum 5 (five) stars.

Table 2. 12 Muslim Friendly Tourism (MFT) standards using star rating system.

| Standard                                           | Country   | Issuing body                                               |
|----------------------------------------------------|-----------|------------------------------------------------------------|
| MS2610:2015                                        | Malaysia  | Department of Standards Malaysia (Government)              |
| TS 13683                                           | Turkey    | Turkish Standards Institution (Government)                 |
| Crescent Rating (1-7 stars)                        | Global    | Crescent Rating (Private)                                  |
| Salam Standard                                     | Global    | Lagitasu Travel (Private)                                  |
| Taiwan Muslim Friendly Tourism (MFT) certification | Taiwan    | China Muslim Association (an NGO backed by the Government) |
| Sofyan Standard                                    | Indonesia | Sofyan Hotels (Private)                                    |
| Instituto Halal internal standard                  | Spain     | Instituto Halal (NGO)                                      |

### **2.8.5. Leadership in Energy and Environmental Design (LEED)**

This method of sustainability rating is one of the most popular rating systems globally. The method uses a total of 69 scores distributed amongst six different categories. Each of these categories has been assigned a credit score based on the number of items it involves. The total 69 points are classified into four ratings, namely, Certified (26-32 points), Silver (32-38 points), Gold (39-51 points), and Platinum (52-69 points). Similarly, BREEAM is considered to be the benchmark in sustainability rating globally and rated as Fail, Pass, Good, Very Good, Excellent, and Outstanding.

## **2.9. BUSINESS PERFORMANCE**

From the earlier section of the literature review, it is well understood that ratings appraise the performance of an organisation against certain standards or compliance practises. Such ratings have been found to have a relationship with overall business performance, both financially and non-financially. Therefore, organisations seek to maintain high ratings by prioritising areas that need improvement and continually reassessing their systems. Hence, this section explores the determinants of business performance, the measuring criteria of financial and non-financial performance, and their relationship with halal compliance and certification.

Business performance has been measured by a number of scholars, academicians, and industry players across the world. However, the components or factors for measuring business performance are more or less similar in all cases. Lingsiya, (2012), for example, in his study identified five factors as the performance indicators for small scale business. These factors were (1) *Customer satisfaction with managing change*, (2) *Income growth*, (3) *Profitability* (4) *growth*, (5) *Sales turnover growth*, and (6) *Growth in number of employees*.

Arguing the dimensions to be considered for measuring business performance, a case study by Garg and Joubert (2004) showed only *business growth* and *profitability* (the financial dimensions) as the significant components for measuring business performance. Whereas the non-financial aspects (e.g., image, customer loyalty, product innovation, etc.) were not significant and suggested these factors to be excluded while measuring business performance. Similarly, Mohamed et al. (2014) in their study considered only the financial dimension to measure business performance and its relation to halal certification. The study looked into three aspects of financial performance namely, *Return on Asset (ROA)*, *Sales*, and *Cash flow to sales for 10 years*.

Simultaneously, studies show that different types of certifications have an impact on both financial (ROA, ROE, ROI, Sales etc.) and non-financial performance (quality, time, and market share) of any business. Therefore, organizational (non-financial) performance is also important to measure the overall business performance (Baharuddin and Ismail, 2018). However, to see the relationship between halal food certification and business performance, Syazwan et al. (2017) investigated business performance from three dimensions namely, *operational*, *marketing*, and *financial performance*. Additionally, Psomas and Kafetzopoulos (2014) in their study measured the business performance of ISO 9001 certified and non-certified businesses in terms of *customer satisfaction*, *quality of the product*, *marketing efficiency*, *operational*, and *financial performance*.

From the above-reviewed literature, it is observed that both financial and non-financial performance has been consistently considered as the criteria to measure business performance. Therefore, the present study also proposes these two criteria to measure the business performance of Halal-certified SMEs in Malaysia. This is required as one of the objectives of the study is to see the impact of the halal compliance rating of SMEs on their business performance.

### **2.9.1. Financial performance**

The review has been divided into two parts. The first part explores the findings from existing research on the relationship between compliance rating and financial business performance. Based on the review a hypothesis has been developed to be tested to validate the rating system developed from the present research. The second part reviews the measuring criteria of financial performance for MSMEs. This review supports the items included in the questionnaire of the present research to measure the financial business performance of the halal certified restaurants in Malaysia.

It is evident that consumers respond positively to the products and services that are certified against certain standards. For example, Nga (2009) found a significant positive relationship between ISO certification and Return on Equity (ROE) performance of business. Similarly, studies found a positive relationship between halal certification and consumer responds to halal products and services (Mohamed et al., 2014). Such findings imply a better financial performance of companies with halal certificate as they experience a higher consumer flow than companies without halal certificates. However, limited research has been done to see the impact of halal compliance and financial performance of businesses. In this regard, Mohamed et al. (2014) found that halal certification does not have any significant impact on ROA of companies with halal certificates. On the contrary, the study found that the halal certified companies had significantly lower cash flow to sales.

However, a significant positive relationship between halal food certification and business performance was realised by Syazwan et al. (2017) where the business performance was measured in terms of both operational and financial performance. Similar finding was reported by a recent study stating a positive impact between halal certification and financial performance of a business in terms of sales revenue, and market share (Muda, Abdul Rahim, et al., 2020). In this regard, Salindal (2015) in his research reported that the financial performance of halal certified companies is significantly influenced by their innovative performance which has a significant positive relationship with the halal certification.

### **2.9.1.1. Measuring criteria of financial performance**

The financial performance of a business organization presents the performance of the business in monetary terms using numerical expressions. It is the common criteria used by most of the researchers to measure business performance. However, the items under financial performance varied amongst different studies. Psomas and Kafetzopoulos (2014), for instance, considered three dimensions to measure financial performance, namely *Sales growth*, *Net profit*, and *Operations cashflow*. Simultaneously, business performance measurement was explored by Wasim et al. (2014) through an extensive literature review. From the study, the five financial attributes out of 26 identified criteria were 1) *sale growth*, 2) *return on investment*, 3) *return on asset*, 4) *profitability*, and 5) *inventory turnover*. However, the conceptual model developed by Antony and Bhattacharyya (2010) considered *profitability*, *productivity*, and *efficiency* as the financial criteria for measuring the organizational performance of SMEs.

Many studies considered financial measures as a short-term measure which is mainly based on past performance. Lodewyckx et al. (2007) in their study identified four significant areas of measuring financial performance namely, profitability, efficiency, capital structure, and liquidity. Profitability is reflected in the income statement of the business that tells whether the business is making loss or profit. Simultaneously, the utilization of business resources and capital and debt are determined by efficiency and capital structure respectively. And liquidity of a business indicates the availability of converting the current assets into cash within the short-term.

In this regard, Matsoso and Benedict (2016) identifies significant criteria for measuring the financial performance of SMEs in the 21<sup>st</sup> century. The three important financial statements investigated by the study were, income statement, balance sheet, and cashflow statement. To realize the financial performance of a business, the study stated several financial ratios which are as follows-

- $\text{Return on Assets (ROA)} = \text{Net income} / \text{average total assets} \times 100$
- $\text{Return on Equity (ROE)} = \text{Net income} / \text{average shareholder's equity} \times 100$
- $\text{Gross Profit Ratio} = (\text{Gross Profit} / \text{Net Sales}) \times 100$
- $\text{Net Profit Ratio} = (\text{Net Income} / \text{Net Sales}) \times 100$

- $\text{Current Ratio} = \text{Current assets} / \text{Current liabilities}$
- $\text{Inventory Turnover ratio} = \text{Cost of Sales} / \text{Average Inventory}$
- $\text{Total Asset turnover ratio} = \text{Net sales} / \text{average total assets} \times 100$
- $\text{Debt to Asset ratio} = \text{Total liability} / \text{Total Assets}$
- $\text{Debt to equity ratio} = \text{Total Liability} / \text{Total equity}$

Additionally, the financial performance of SMEs was also measured by profitability, liquidity, leverage, and activity of the respective business (Mendoza, 2015). In the study, Mendoza (2015) used secondary data and different scale of ratios and percentages to measure the four selected dimensions of financial performance in the study. However, collecting financial statement data from MSMEs can be challenging due to a combination of several factors such as limited resources, financial knowledge (Stevens, 2017), and access to financial tools and professionals (Abdullah et al., 2020; Elasrag, 2016; Muhammad et al., 2010). Additionally, MSMEs may be hesitant to share financial data if they are not confident in the accuracy of their financial statements or if they are concerned about being judged based on the financial performance of their business (Livieratos et al., 2022; Wahyono et al., 2021; Wasim et al., 2014).

In this regard, an alternative approach is subjective measurement that has been used by many researchers. Subjective measures of financial performance refer to metrics that are based on personal opinions or perceptions. Satisfaction level can be a subjective measure of financial performance of MSMEs. Indicators based on accounting data reveal the level of operational effectiveness inside a business. One can get accounting-based financial performance measurements from the financial statement or via a perceived financial performance assessment. Both of these options are available. Miller and Cardinal (1994) in their study found that when there are difficulties in getting objective measurements, perceived financial performance indicators are strongly supported for and utilised in lieu of objective financial indicators. This is because perceived indicators are easier to interpret. Hence, the use of subjective or perceived financial performance indicator(s) as a performance metric has received a significant amount of attention in the academic literature (Galbreath and Galvin, 2008;



Judge et al., 1998; O'Donohue and Torugsa, 2015; Pereira-Moliner et al., 2015; Saeidi et al., 2015).

Considering the scope of the study, present research adopts the accounting indicators (return on investment, gross profit ratio, net profit ratio, current ratio and debt ratio) and perceived measurement approaches to measure the financial performance of the MSME owners of halal-certified restaurants in Malaysia. Ahinful et al. (2021) in their study used a five-point Likert scale in the perceived measurement of financial performance against return on sales, gross profit ratio, and net profit ratio. Similar scale has been used in present research where respondents were asked to state their satisfaction level against the financial indicators based on a scale with five points, ranging from "1" for "Very poorly satisfied" to "5" for "Very highly satisfied".

#### **2.9.2. Non-financial performance:**

The review was divided into two parts. The first part explores the findings from existing research on the relationship between compliance rating and non-financial business performance. Based on the review a hypothesis has been developed to be tested to validate the rating system developed from the present research. The second part reviews the measuring criteria of non-financial performance for MSMEs. This review supports the items included in the questionnaire of the present research to measure non-financial business performance of the halal certified restaurants in Malaysia.

The researcher of the present study was not aware of any research or study that measured the level of halal compliance of different business companies and explored the relationship of different ratings on their business performance. However, a number of studies have been carried out to investigate the influence of halal certification on business performance of different companies. For example, AbTalib (2018) in his research found a significant positive relationship between the implementation of halal certification and business performance in terms of marketing, operational, and financial performance. Similar study was conducted among the halal food companies by Salindal, (2018). The study found that the innovative performance of the halal food companies is

significantly affected by the halal certification which ultimately has an impact on the market performance of the business. Such positive relationship between the innovative performance of companies and halal certification is in line with the findings of the study conducted in UAE by Rajagopal et al. (2011).

#### ***2.9.2.1 Measuring criteria of non-financial performance***

Non-financial performance of a company has its impact on its market share and customer satisfaction which ultimately affects overall business performance (Ahmed, 2015). Psomas and Kafetzopoulos (2014) in their study reviewed a number of literatures to select the indicators for measuring organizational performance. The study proposed three criteria for non-financial performance measurement which are customer loyalty, customer satisfaction, and product innovation.

Simultaneously, an empirical study was done by Wasim et al. (2014) to explore the measurement of organizational performance of SMEs. The study identified 26 different criteria of measuring business performance where the non-financial attributes include- 1) employee turnover, 2) market share, 3) customer satisfaction, 4) owners' satisfaction, 5) customers' referral rates, 6) delivery time, 7) waiting time, 8) new product development, 9) customer retention, 10) competitive position, 11) innovation, 12) product reliability, 13) data storing capability, 14) workflow improvement, 15) skills development, 17) customer loyalty achieved, 18) levels of employee satisfaction with their jobs, 19) ability of the organization to attract and employ qualified employees, 20) levels of employee retention, and 26) shareholders' satisfaction.

Additionally, Antony and Bhattacharyya (2010) in their study considered both financial and non-financial aspects to develop a conceptual model of measuring the organizational performance of SMEs. The non-financial criteria selected by the study were, *innovativeness, creativity, competitiveness, efficiency, and productivity* of the business organization which was similar to the study by Sink and Tuttle (1989), and Rolstadas (1998).

## 2.10. CONCEPTUAL MODEL

A conceptual research model is a theoretical framework that helps to guide research by providing a structure for understanding a particular phenomenon or issue. A conceptual research model typically consists of a set of concepts or variables that are related to one another in some way and can be used to explain or predict the phenomenon being studied. Conceptual research models can be used in a wide range of fields, including social science, business, and economics, to help researchers understand complex systems or relationships. They are often developed based on existing theory and research, but can also be used to generate new hypotheses and test new ideas (Drew et al., 2014).

The present research adapts the research framework proposed by Baharuddin and Ismail (2018), and the research done by Syazwan et. al, (2017). The proposed conceptual framework is illustrated in Figure 2. 6 which reflects the second part (validating HCR model) of the research. The framework shows that the ten selected HCR components generate the model of best practice of HCR (BPHCR). Such formation of BPHCR is valid with the assumptions that all ten HCR components have significant positive impact on BPHCR. Furthermore, it has been realised from the literature that halal compliance practice has significant relationship with the business performance. Hence, the conceptual research framework also assumes that BPHCR has a significant impact on Business performance (BP) of MSMEs in terms of both financial performance (FP) and non-financial performance (NFP). The hypotheses are listed as follows:

**Hypothesis 1.** (H<sub>1</sub>): Knowledge of halal and *toyyib* (KNW) has significant impact on best practice of HCR (BPHCR).

**Hypothesis 2.** (H<sub>2</sub>): Management responsibility (MGT) has significant impact on BPHCR.

**Hypothesis 3.** (H<sub>3</sub>): Premise, location, and design (PLD) has significant impact on BPHCR.

**Hypothesis 4.** (H<sub>4</sub>): Hygiene and food safety (HFS) has significant impact on BPHCR.

**Hypothesis 5. (H<sub>5</sub>):** Human resources and culture (HRC) has significant impact on BPHCR.

**Hypothesis 6. (H<sub>6</sub>):** Branding, packaging, and labelling (BPL) has significant impact on BPHCR.

**Hypothesis 7. (H<sub>7</sub>):** Image and customer satisfaction (ICS) has significant impact on BPHCR.

**Hypothesis 8. (H<sub>8</sub>):** Legal requirements (LR) has significant impact on BPHCR.

**Hypothesis 9. (H<sub>9</sub>):** Green practice and sustainability (GPS) has significant impact on BPHCR.

**Hypothesis 10. (H<sub>10</sub>):** Halal supply chain (HSC) has significant impact on BPHCR.

**Hypothesis 11. (H<sub>11</sub>):** BPHCR has significant impact on overall business performance (BP) of halal certified restaurants in Malaysia.

**Hypothesis 12. (H<sub>12</sub>):** BPHCR has significant impact on financial performance (FP) of halal certified restaurants in Malaysia.

**Hypothesis 13. (H<sub>13</sub>):** BPHCR has significant impact on non-financial performance (NFP) of halal certified restaurants in Malaysia.

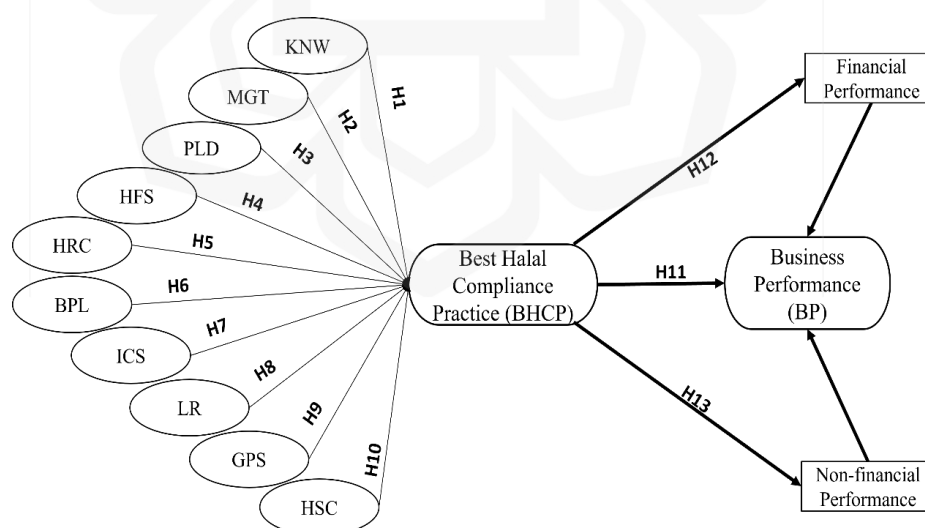


Figure 2. 6 Conceptual model of best practice of HCR (BPHCR) and research framework

## 2.11. CHAPTER SUMMARY

To summarise, this chapter has reviewed articles on different standards and rating systems relevant to the Halal F&B industry, ranking and rating methodologies, linguistic expressions of ratings, some popular rating systems for restaurants globally, and the business performance of MSMEs and their measuring criteria in terms of both financial and non-financial aspects. The reviewed articles included a variety of sources, such as books, book chapters, scientific journal papers, seminar papers, conference papers, patents, web articles, annual reports, and newspaper articles. All of these papers came from reliable sources and were published by authors in a variety of economic contexts. In addition, most of the reviewed literature was in the context of Malaysia and the global halal industry since the location of the study was Malaysia. Overall, the reviewed literature met the inclusion criteria for the present research.

Following a review of various standards and rating systems relevant to the halal food and beverage industry, ten components were identified as important for Halal Compliance Rating (HCR). These components were also found to have a relationship with the business performance of halal certified MSMEs in some studies. Furthermore, the absolute measurement approach of AHP was discovered to be the most appropriate method of ranking and rating, as well as the most appropriate method for the current study. In this regard, the pairwise comparison method (PCM), which is also one of the AHP steps, was discovered to be the best choice to measure the weights of ten HCR components. Simultaneously, the chapter identifies a suitable range of rating intensities and linguistic expressions of the ratings. Finally, a conceptual research model illustrating the validation of the proposed BPHCR model has been presented. The framework shows a total of thirteen hypotheses to be assessed to validate the structural model.

## CHAPTER-3

### METHODOLOGY

#### 3.1. INTRODUCTION

This chapter begins with an outline illustrating the different sections of the methodology discussed (Figure 3. 1). It is then followed by the philosophical assumptions of the study, and research strategy and design (section 3.2 and 3.3). Different methods adopted in different phases of the research have been explained in detail in section 3.4. Additionally, the observed and latent variables are defined, the hypotheses are stated, and the questionnaire design has been outlined. Simultaneously, section 3.3 explains the sampling strategy for this research. Finally, ethical consideration and chapter summary have been discussed in section 3.5 and 3.6 respectively.

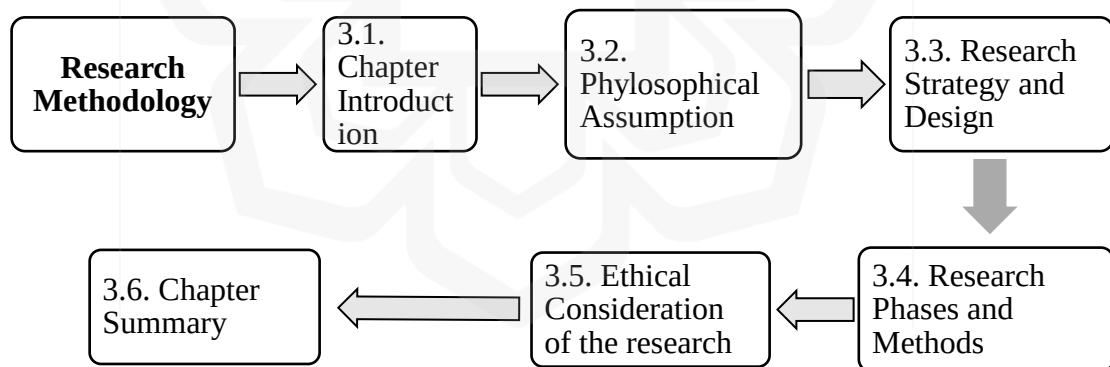


Figure 3. 1 Outline of Chapter-3: Methodology

### 3.2. PHYLOSOPHICAL ASSUMPTION

A philosophical assumption is the theoretical framework that guides a research process. It establishes the background for drawing conclusions or making decisions. There are several types of philosophical assumptions that are used to develop research methodologies: ontological, epistemological, axiological, and research pragmatism (Aburaya and Gomaa, 2020; Sapkota and Paudyal, 2021).

Ontological assumptions are about the nature of reality and its characteristics. Epistemological assumptions, on the other hand, are about the approach to acquiring knowledge and how to justify those knowledge claims. For example, knowledge may derive from empirical observation and measurement or from personal interpretation and understanding. Epistemological assumptions ensure how to justify the validity and reliability of data collection and analysis methods (Sapkota and Paudyal, 2021). Axiological assumptions are about what is important and valuable in research and how it deals with ethical issues. Finally, Research pragmatism is a paradigm that accepts concepts as relevant only if they support action. Pragmatism acknowledges the plurality of perspectives, the possibility of other realities, and the multiplicity of methods for investigating them (Kaushik and Walsh, 2019). In contrast to the positivist idea of objective truth or reality, pragmatism prioritises practicality and efficacy. Some advantages of using research pragmatism are:

- (i) It makes the social science research transferable. The pragmatists argue that the information gleaned from a mixed-method study may be used in other situations, if not wholly, then partially (Kelly and Cordeiro, 2020).
- (ii) It emphasises actionable knowledge that can inform practise and policy. Pragmatists focus on solving real-world problems and generating useful outcomes rather than adhering to abstract principles or theories (Kaushik and Walsh, 2019).
- (iii) It allows for flexibility, creativity, and diversity in research methods and approaches. Pragmatists can use both quantitative and qualitative methods or a combination of both, depending on the research question and purpose (Matta, 2022).

The current research is based on the idea that there is a set of best practises for halal compliance that can be objectively measured and confirmed using a systematic and quantitative approach. It also assumes that if these best practises are used, the owners and/or managers of halal-certified restaurants will be better able to follow halal rules. Furthermore, the research assumes that the AHP method is a reliable tool for measuring and ranking halal compliance practises and that the use of SEM techniques and statistical software such as SPSS and SmartPLS can provide a rigorous and accurate assessment of the proposed HCR model. Finally, the research assumes that the findings presented in the study will be useful for improving halal compliance practises in Malaysia and can contribute to the broader literature on halal certification and food safety.

The research describes a philosophical assumption called the epistemological assumption. This is a belief about how knowledge can be gained, verified, and used in a certain situation (Sapkota and Paudyal, 2021). In particular, the assumption is that systematic and quantitative research methods, such as the AHP method, SEM techniques, and statistical software, can be used to get objective knowledge. The assumption also includes the idea that the results of this research can be used to improve halal compliance and the business performance of MSMEs in Malaysia. This is an example of how knowledge can be used to solve real-world problems.

The research assumption can also be related to research pragmatism. Research pragmatism is a philosophical perspective that emphasises the importance of using a variety of research methods and techniques that are appropriate for the research question at hand (Kelly and Cordeiro, 2020). The assumption in the research aligns with this perspective by adopting a multi-method approach that combines the use of literature review, AHP, and SEM techniques to achieve the research objectives. This approach reflects a pragmatic view that different methods and techniques can be used together to provide a more comprehensive and robust understanding of the phenomenon under study. Therefore, the research assumption is consistent with both epistemological and research pragmatism perspectives.



### 3.3. RESEARCH STRATEGY AND DESIGN

In this research work, the components of best practice of halal compliance rating (HCR) have been selected and weighted applying AHP. Simultaneously, a rating scale for linguistic expression of HCR scores has been proposed. With the use of selected HCR components and rating scale the HCR tool has been developed employing the absolute measurement approach of AHP that has been used in existing rating practices in relevant industries. The whole research is comprised of four main phases to develop and validate the best practice of HCR model for halal certified restaurants. Different strategies adopted in four phases and their contributions to achieving research objectives are illustrated in Figure 3. 2. The four phases of the research are as follows-

- PHASE-I : There are three goals at this stage, all of which contribute to the achievement of Research Objectives 1 and 2(b). The goals are to identify the HCR components of best halal compliance practice for restaurants and to study rating technique utilised by existing rating systems in relevant sectors, as well as to choose a rating scale appropriate for the language representation of HCR scores.
- PHASE-II : The weights of the selected HCR components and the selected rating categories are measured in the second phase of the research. This phase of the research contributes to achieve RO2(a) and RO2 (b).
- PHASE-III : Developing the HCR tool to evaluate and rate halal-certified restaurants in Malaysia, constructing a research questionnaire to assess the application and validity of the HCR tool, and conducting a survey and data collection are the three main objectives of Phase III.
- PHASE-IV : The last part of this study evaluates and rates the halal-certified restaurants that were surveyed in Malaysia, and it validates the model called the "Best Practice of HCR" (BPHCR) model.

| Phase                                                                               | Goals                                                                                                                                                                                                                                                                                                                 | Strategy                                                                                                                                                                                                                                                                                                                                                       | RO(s) to achieve                                                       |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Phase-I</b>                                                                      | <ol style="list-style-type: none"> <li>1. Selecting HCR components of best halal compliance practices for restaurants.</li> <li>2. Selecting a suitable rating scale for linguistic expression of HCR scores</li> <li>3. Learning rating methodology used by exiting rating systems in relevant industries</li> </ol> | <ul style="list-style-type: none"> <li>– Extensive review of previous research, and existing standards and rating systems in relevant sectors of halal industry.</li> <li>– Review of rating scale and methodology used by exiting rating and ranking systems in relevant industries</li> <li>– Experts' opinion on the selection of HCR components</li> </ul> | <ul style="list-style-type: none"> <li>– RO1 and RO2(b)</li> </ul>     |
|  |                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                |                                                                        |
| <b>Phase-II</b>                                                                     | <ol style="list-style-type: none"> <li>1. Measuring the weights of the selected HCR components</li> <li>2. Measuring the weights of selected rating categories.</li> </ol>                                                                                                                                            | <ul style="list-style-type: none"> <li>– Applying pair-wise comparison method of AHP involving experts</li> </ul>                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>– RO2(a) and RO2 (b)</li> </ul> |
|  |                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                |                                                                        |
| <b>Phase-III</b>                                                                    | <ol style="list-style-type: none"> <li>1. Developing HCR tool for ranking and rating halal-certified restaurants in Malaysia</li> </ol>                                                                                                                                                                               | <ul style="list-style-type: none"> <li>– Applying absolute measurement approach of AHP</li> <li>– Literature review and experts' opinion</li> </ul>                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>– RO3</li> </ul>                |

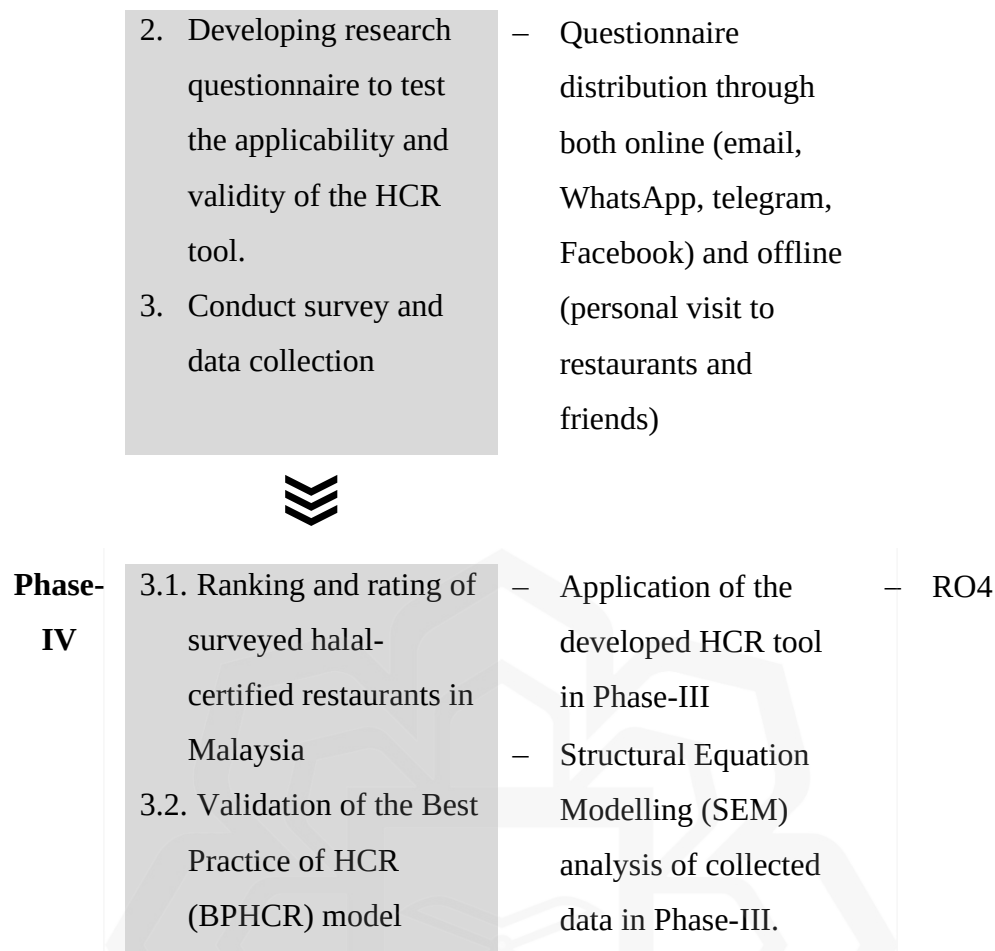


Figure 3. 2 Research strategy flowchart

### 3.4. RESEARCH PHASES AND METHODS

The following sections provide an explanation of the many approaches and procedures that have been used in this study in order to complete the four stages that were outlined previously and to meet the research goals. The study has adopted a quantitative approach to research methodology.

#### 3.4.1. Phase-I: Selection of HCR components, rating scale, and rating methodology

There are three goals at this stage, all of which contribute to the achievement of Research Objectives 1 and 2(b). The goals are to identify the HCR components of best

halal compliance practice for restaurants and to study rating technique utilised by existing rating systems in relevant sectors, as well as to choose a rating scale appropriate for the language representation of HCR scores.

#### **3.4.1.1 Selection of HCR components**

Phase-I of the research aims to identify and select the HCR components of best halal compliance practice. To meet this goal, an extensive literature review has been carried out following the suggestion by previous research scholars (Hawkins, 2013; Seuring and Gold, 2012; Snyder, 2019). Chapter-2 of this research reviews different standards in halal industry as well as in relevant sectors, previous research papers and criteria used in relevant rating systems. From an extensive review of literature, the chapter identifies ten components of best halal compliance practice in restaurants as presented in Table 3. 1. These HCR components have been used in other phases of the research that include research questionnaire development, ranking and rating of halal-certified restaurants, and BPHCR model validation.

Table 3. 1 Selected HCR components and their research codes

| <b>No.</b> | <b>HCR components</b>                | <b>Research code</b> |
|------------|--------------------------------------|----------------------|
| [1]        | Knowledge on halal and <i>toyyib</i> | KNW                  |
| [2]        | Management responsibility            | MGT                  |
| [3]        | Premise layout, location and design  | PLD                  |
| [4]        | Hygiene and food safety              | HFS                  |
| [5]        | Human resources and culture          | HRC                  |
| [6]        | Branding, packaging and labelling    | BPL                  |
| [7]        | Image and customer satisfaction      | ICS                  |
| [8]        | Legal requirements                   | LR                   |
| [9]        | Green practice and sustainability    | GPS                  |
| [10]       | Halal supply chain                   | HSC                  |

### 3.4.1.2 Selection of experts

Experts play a crucial role in the AHP method comparing the importance of selected components in pairs. The scores of importance provided by the experts are used to measure the weights of the components. In present the research, experts' opinions were also important to justify the selection of the HCR components. In this regard, judgemental sampling method was used to select the experts. Experts are those individuals who are well informed and have sufficient knowledge on a specific topic. For the present research, experts are defined as academicians and industry personnel who have insights on the selected HCR components. As for the sample size, Takala et al. (2006) report that the AHP approach only needs a limited number of knowledgeable participants. This strategy is used to manage difficult situations that need only expert judgment. Table 3. 2 shows the sample size of recent AHP-based publications where it is less than 20. Hence, present research approached 20 experts to participate in the survey. Out of 20 experts, 19 responded for the selection of HCR components and 15 responded for the pair-wise comparison survey. The number of responses was deemed sufficient based on the sample size used in recent studies presented in Table 3. 2.

Table 3. 2 Sample size in the application of AHP by recent studies

| No. | Source                     | Research area                                      | Number of experts |
|-----|----------------------------|----------------------------------------------------|-------------------|
| 1.  | Jawwad and AbuNaffa (2022) | Maintenance Management                             | 12                |
| 2.  | Liu et al. (2021)          | Sustainability and City rankings                   | 4                 |
| 3.  | Kwatra et al. (2021)       | Ranking sustainability issues                      | 17                |
| 4.  | Zeferino et al. (2021)     | Covid-19: Ranking factors of quarantine facilities | 10                |
| 5.  | Piya et al. (2020)         | Supply-chain Management                            | 5                 |
| 6.  | Piprani et al. (2020)      | Supply-chain Management                            | 15                |

|    |                           |                           |   |
|----|---------------------------|---------------------------|---|
| 7. | Gazerani et al. (2019)    | Healthcare                | 5 |
| 8. | Al-Marzooqi et al. (2019) | Physical Asset Management | 7 |

After experts were identified, it was requested that they share their opinion regarding the degree to which they agree or disagree that the selected HCR components are important and relevant for the best practice of HCR for restaurants in Malaysia. For this survey, a five-point Likert scale was used, where 5 denoted "strongly agree" and a score of 1 denoted "strongly disagree."

#### ***3.4.1.3 Rating methodology***

The literature review, Chapter 2, reviews AHP as the most appropriate and popular method of ranking and rating system which has been applied by innumerable researchers and scholars in different types of industries. The detail steps of AHP have been described as follows-

##### ***3.4.1.3.1 Analytic Hierarchy Process (AHP)***

The rating methodology of AHP involves four major steps. The 1<sup>st</sup> step is to construct the hierarchy which is comprised of the goal, criteria, and the alternatives. For the present research, the goal is to rank and rate the halal-certified restaurants in Malaysia; the criteria are the selected 10 HCR components from Chapter 2, and the alternatives are the halal-certified restaurants in Malaysia. Figure 3. 3 illustrates the general AHP hierarchy construct proposed by Saaty (1986) and used in ranking and rating system. Chapter 4 presents the construct used in present research.

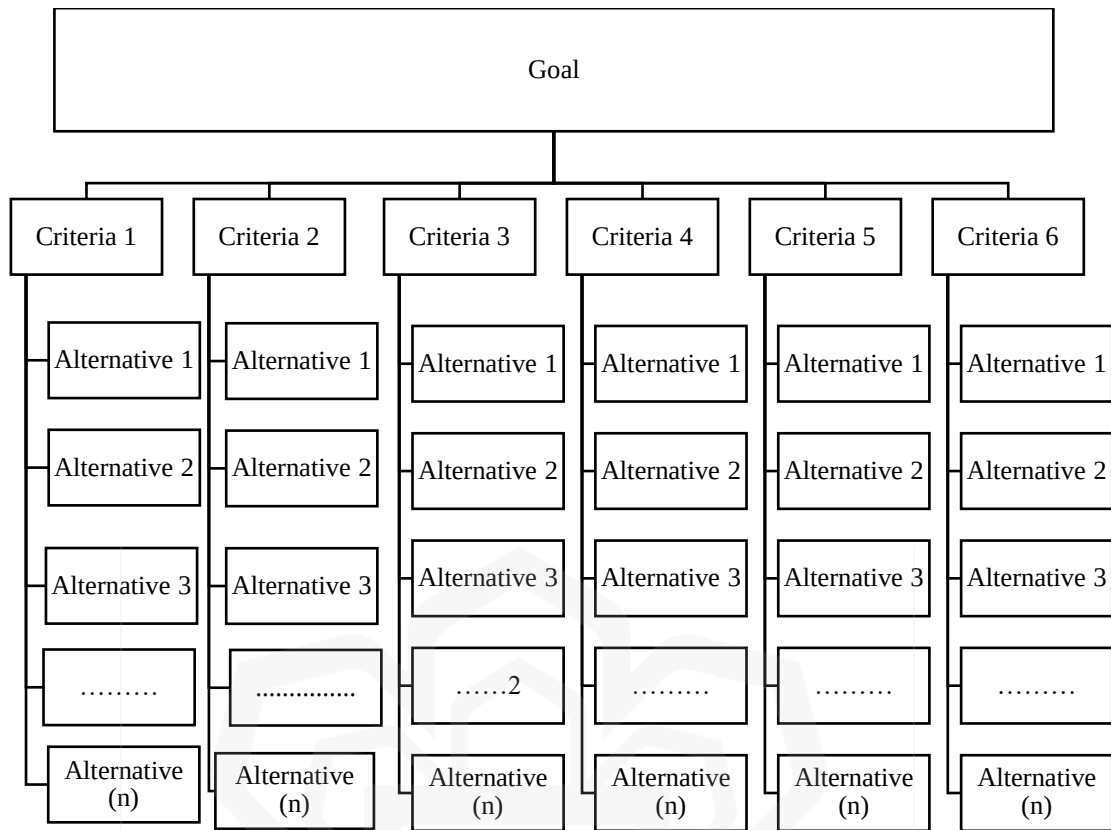


Figure 3. 3 AHP Hierarchy construct

The 2<sup>nd</sup> step is to measure the weights of criteria. This is done by pair-wise comparison of the criteria with help of experts' judgements based on Saaty scale of relative importance (Table 3. 3).

In 3<sup>rd</sup> step, each criterion is broken down into various intensities or ratings. Following section shows the ratings used in present research. After that, priorities are assigned to the intensities by comparing them pairwise inside each criterion. These priorities are then multiplied by the priority of the criterion that they are derived from. The final step entails selecting one alternative at a time, evaluating its rating in relation to each criterion, and then totalling the overall score of the ratings for each alternative.

Table 3. 3 Saaty Scale of relative importance

| Measuring Scale        | Score |
|------------------------|-------|
| Equal importance       | 1     |
| Moderate importance    | 3     |
| Strong importance      | 5     |
| Very strong importance | 7     |
| Extreme importance     | 9     |
| Intermediate values    | 2     |
|                        | 4     |
|                        | 6     |
|                        | 8     |

#### 3.4.1.3.2 Rating categories

According to the third step of AHP method, each component has been divided into five rating categories as presented in Table 3. 4. The rating categories has been deducted from literature review in Chapter 2. Following the same steps of measuring the weights of HCR components, the weights of selected ratings are also determined by pairwise comparison by the experts' judgements. Table 3. 4 also shows the range of scores which has been decided from the literature review. The rating weights are used in the final step of AHP as mentioned earlier. Each alternative (restaurant) has been judged by observing its rating under each HCR component based on the range of rating score as shown in Table 3.4. Chapter 4 presents the findings of this step.



Table 3. 4 Ratings of HCR components

| <b>Linguistic rating of<br/>HCR</b> | <b>AHP Code</b> | <b>Range of rating<br/>score</b> |
|-------------------------------------|-----------------|----------------------------------|
| Excellent                           | Ex              | $\geq 4.5$                       |
| Very good                           | VG              | 3.5 to $< 4.5$                   |
| Good                                | G               | 2.5 to $< 3.5$                   |
| Satisfactory                        | Sf              | 1.5 to $< 2.5$                   |
| Poor                                | P               | $< 1.5$                          |

### **3.4.2. Phase-II: Measuring weights of HCR components and their Ratings**

This phase of research achieves the 2<sup>nd</sup> objective of the study. To achieve this objective the researcher collected response from 19 experts in relevant fields from different institutions in the process of pairwise comparison. The 19 experts were academicians, and industry specialists from the International Institute of Halal Research and Training (INHART), University Sains Islam Malaysia (USIM), Food Research Institute of the University Putra Malaysia (UPM), and food technologist from Sime Darby Oils Professional Sdn Bhd., Malaysia (Please see Appendix-III). The findings are presented in next chapter (Chapter 4).

#### **3.4.2.1. Pairwise comparison matrix for HCR components**

To measure the weight of HCR components, the first step was to prioritise the ten selected components with the judgements of experts. In this regard the AHP tool (in Microsoft Excel format) developed by Goepel (2013) was adopted for this present research. The tool was sent to the experts along with a request letter to contribute to this research. The tool included the definition of all the ten selected HCR components as

shown in Table 3. 1. Each expert received two files. One was for prioritising the 10 HCR components that included a total of 45 different pairs. Another file was to prioritise the five ratings that included 10 different pairs. Figure 3. 4 shows the excel interface where experts were requested to put their judgement scores to prioritise the HCR components. The 45 pairs of 10 HCR components were arranged two columns (column A and B).

| AHP Analytic Hierarchy Process                                                                                                                                                                                                                                                                                                                                                                                                |            |                                   |       | n=    | 10 | Input | 1 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------|-------|-------|----|-------|---|
| Objective: To prioritise the components of best halal compliance practice by Halal Restaurants in Malaysia                                                                                                                                                                                                                                                                                                                    |            |                                   |       |       |    |       |   |
| Only input data in the light green fields!                                                                                                                                                                                                                                                                                                                                                                                    |            |                                   |       |       |    |       |   |
| 1. Please compare the importance of the components and fill in the table<br>2. Which component of each pair is more important, A or B ?<br>3. To what extent (1-9) the importance is based on the Saaty scale (on right)<br>4. Once completed, you might need to adjust the highlighted comparisons 1 to 10 to improve consistency. If your response is not consistent, the inconsistent rows will be highlighted next to the |            |                                   |       |       |    |       |   |
| n                                                                                                                                                                                                                                                                                                                                                                                                                             | components | Comment                           | RGMM  | +/-   |    |       |   |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                             | KNW        | Knowledge on halal and toyib      | 12.7% | 4.9%  |    |       |   |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                             | MGT        | Management responsibility         | 24.1% | 10.0% |    |       |   |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                             | PLD        | Premise location and design       | 1.6%  | 0.7%  |    |       |   |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                             | HFS        | Hygiene and food safety           | 22.3% | 8.6%  |    |       |   |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                             | HRC        | Human resources and culture       | 4.1%  | 1.6%  |    |       |   |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                             | BPL        | Branding, packaging and labelling | 3.6%  | 1.8%  |    |       |   |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                             | ICS        | Image and customer satisfaction   | 2.7%  | 1.2%  |    |       |   |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                             | LR         | Legal requirements                | 6.8%  | 3.3%  |    |       |   |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                             | GPS        | Green practice and sustainability | 8.6%  |       |    |       |   |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                            | HSC        | Halal supply chain                | 13.5% | 3.7%  |    |       |   |

| Participant 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | 1    | 12.10.2020        | $\alpha$ : | 0.1   | CR:              | 7%    |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------|-------------------|------------|-------|------------------|-------|---|--|---|--|------------|--|------------------|-------|--|--|---|---|--------|-------|--|--|---|---|-----|-----|---|---|--|--|---|---|--|-----|---|---|--|--|---|---|--|-----|---|---|--|--|---|---|--|-----|---|---|--|--|---|---|--|-----|---|---|--|--|---|---|--|-----|---|---|--|--|---|---|--|----|---|---|--|--|---|---|-----|-----|---|---|--|--|---|---|--|-----|---|---|--|--|
| Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Weight | Date | Consistency Ratio |            |       |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| <table border="1"> <thead> <tr> <th colspan="2">i</th> <th colspan="2">j</th> <th colspan="2">components</th> <th>more important ?</th> <th>Scale</th> </tr> <tr> <th colspan="2"></th> <th>A</th> <th>B</th> <th>A or B</th> <th>(1-9)</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2</td> <td>KNW</td> <td>MGT</td> <td>B</td> <td>3</td> <td colspan="2"></td> </tr> <tr> <td>1</td> <td>3</td> <td></td> <td>PLD</td> <td>A</td> <td>9</td> <td colspan="2"></td> </tr> <tr> <td>1</td> <td>4</td> <td></td> <td>HFS</td> <td>B</td> <td>3</td> <td colspan="2"></td> </tr> <tr> <td>1</td> <td>5</td> <td></td> <td>HRC</td> <td>A</td> <td>5</td> <td colspan="2"></td> </tr> <tr> <td>1</td> <td>6</td> <td></td> <td>BPL</td> <td>A</td> <td>7</td> <td colspan="2"></td> </tr> <tr> <td>1</td> <td>7</td> <td></td> <td>ICS</td> <td>A</td> <td>3</td> <td colspan="2"></td> </tr> <tr> <td>1</td> <td>8</td> <td></td> <td>LR</td> <td>A</td> <td>2</td> <td colspan="2"></td> </tr> <tr> <td>2</td> <td>3</td> <td>MGT</td> <td>PLD</td> <td>A</td> <td>9</td> <td colspan="2"></td> </tr> <tr> <td>2</td> <td>4</td> <td></td> <td>HFS</td> <td>A</td> <td>1</td> <td colspan="2"></td> </tr> </tbody> </table> |        |      |                   |            |       |                  |       | i |  | j |  | components |  | more important ? | Scale |  |  | A | B | A or B | (1-9) |  |  | 1 | 2 | KNW | MGT | B | 3 |  |  | 1 | 3 |  | PLD | A | 9 |  |  | 1 | 4 |  | HFS | B | 3 |  |  | 1 | 5 |  | HRC | A | 5 |  |  | 1 | 6 |  | BPL | A | 7 |  |  | 1 | 7 |  | ICS | A | 3 |  |  | 1 | 8 |  | LR | A | 2 |  |  | 2 | 3 | MGT | PLD | A | 9 |  |  | 2 | 4 |  | HFS | A | 1 |  |  |
| i                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        | j    |                   | components |       | more important ? | Scale |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        | A    | B                 | A or B     | (1-9) |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2      | KNW  | MGT               | B          | 3     |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3      |      | PLD               | A          | 9     |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4      |      | HFS               | B          | 3     |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5      |      | HRC               | A          | 5     |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 6      |      | BPL               | A          | 7     |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 7      |      | ICS               | A          | 3     |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 8      |      | LR                | A          | 2     |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3      | MGT  | PLD               | A          | 9     |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4      |      | HFS               | A          | 1     |                  |       |   |  |   |  |            |  |                  |       |  |  |   |   |        |       |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |     |   |   |  |  |   |   |  |    |   |   |  |  |   |   |     |     |   |   |  |  |   |   |  |     |   |   |  |  |

Figure 3. 4 Snapshot excel interface of prioritising HCR components (participant 1)

Q.1: Which component of each pair is more important, A or B? The important component was recorded in the column next to column B. Experts used Saaty's preference scale (Table 3. 3), assigning points between 1 and 9 for various options and

recorded the score in the next column as shown in Figure 3.4. When comparing other pairs, the same kind of inquiry was asked.

Out of twenty experts, fifteen (15) had responded and sent back their feedback on HCR components pairwise comparison. The Table 3. 5 forms the matrix showing the value of importance for each HCR component over another provided by one participant. The diagonal value (1) shows the equal importance. Likewise, responses from 15 experts were collected. The adopted excel AHP tool uses a *weighted geometric mean* of the decision matrices components to combine all 15 participants' inputs and get an aggregated group matrix. The findings are presented in Chapter 4.

Table 3. 5 AHP Pairwise comparison matrix for HCR components (Participant-1)

| Participant No. |     | 1   |     |     |     |     |     |     | Date: 12-10-20 |     |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|----------------|-----|
|                 | KNW | MGT | PLD | HFS | HRC | BPL | ICS | LR  | GPS            | HSC |
| KNW             | 1   | 1/3 | 9   | 1/3 | 5   | 7   | 3   | 2   | 2              | 1   |
| MGT             | 3   | 1   | 9   | 1   | 5   | 5   | 5   | 7   | 3              | 3   |
| PLD             | 1/9 | 1/9 | 1   | 1/7 | 1/3 | 1/5 | 1/2 | 1/7 | 1/7            | 1/5 |
| HFS             | 3   | 1   | 7   | 1   | 9   | 7   | 7   | 2   | 3              | 2   |
| HRC             | 1/5 | 1/5 | 3   | 1/9 | 1   | 1   | 1   | 1   | 1              | 1/3 |
| BPL             | 1/7 | 1/5 | 5   | 1/7 | 1   | 1   | 3   | 1/3 | 1/5            | 1/5 |
| ICS             | 1/3 | 1/5 | 2   | 1/7 | 1   | 1/3 | 1   | 1/5 | 1/5            | 1/5 |
| LR              | 1/2 | 1/7 | 7   | 1/2 | 1   | 3   | 5   | 1   | 1/2            | 1/4 |
| GPS             | 1/2 | 1/3 | 7   | 1/3 | 1   | 5   | 5   | 2   | 1              | 1/3 |
| HSC             | 1   | 1/3 | 5   | 1/2 | 3   | 5   | 5   | 4   | 3              | 1   |

### 3.4.2.2. Pairwise comparison matrix for ratings

Similarly, the experts were requested to prioritise the five ratings stated in Table 3.4.

For this, another excel file was sent to prioritise the five ratings that included 10 different pairs.

Figure 3. 5 shows the excel interface where experts were requested to put their judgement scores to prioritise ratings. The 10 pairs of five ratings were arranged in two columns (column A and B). Experts were asked a typical question to compare each pair.

Objective: Measuring weights of different ratings of HCR components

**Only input data in the light green fields!**

Please compare the importance of the elements in relation to the objective and fill in the table: Which element of each pair is more important, **A** or **B**, and **how much** more on a scale 1-9 as given below.

Once completed, you might adjust highlighted comparisons 1 to 3 to improve consistency.

| n  | Criteria     | Comment                                                                             | RGMM  | +/-  |
|----|--------------|-------------------------------------------------------------------------------------|-------|------|
| 1  | Excellent    |                                                                                     | 42.7% | 8.1% |
| 2  | Very good    |                                                                                     | 26.3% | 4.6% |
| 3  | Good         |                                                                                     | 16.2% | 2.8% |
| 4  | Satisfactory |                                                                                     | 10.1% | 2.0% |
| 5  | Poor         |                                                                                     | 4.6%  | 1.0% |
| 6  |              |                                                                                     |       |      |
| 7  |              |                                                                                     |       |      |
| 8  |              |                                                                                     |       |      |
| 9  |              |                                                                                     |       |      |
| 10 |              | for 9&10 unprotect the input sheets and expand the question section ("+" in row 66) |       |      |

Participant 1    1    15-09-20     $\alpha$ : 0.1    CR: 2%

Name    Weight    Date    Consistency Ratio

|   |   | Criteria     |              | more important ? | Scale |
|---|---|--------------|--------------|------------------|-------|
| i | j | A            | B            | A or B           | (1-9) |
| 1 | 2 | Excellent    | Very good    | A                | 2     |
| 1 | 3 |              | Good         | A                | 3     |
| 1 | 4 |              | Satisfactory | A                | 4     |
| 1 | 5 |              | Poor         | A                | 7     |
| 1 | 6 |              |              |                  |       |
| 1 | 7 |              |              |                  |       |
| 1 | 8 |              |              |                  |       |
| 2 | 3 | Very good    | Good         | A                | 2     |
| 2 | 4 |              | Satisfactory | A                | 3     |
| 2 | 5 |              | Poor         | A                | 5     |
| 2 | 6 |              |              |                  |       |
| 2 | 7 |              |              |                  |       |
| 2 | 8 |              |              |                  |       |
| 3 | 4 | Good         | Satisfactory | A                | 2     |
| 3 | 5 |              | Poor         | A                | 4     |
| 3 | 6 |              |              |                  |       |
| 3 | 7 |              |              |                  |       |
| 3 | 8 |              |              |                  |       |
| 4 | 5 | Satisfactory | Poor         | A                | 3     |
| 4 | 6 |              |              |                  |       |

Figure 3. 5 Snapshot of excel interface of prioritising rating categories (participant 1)

Q.1: Which rating of each pair is more important, A or B? The important rating was recorded in the column next to column B. Experts used Saaty's preference scale (Table 3. 3), assigning points between 1 and 9 for various options and recorded the score in the next column as shown in Figure 3.5. Following the same question, the rest of the pairs were compared by the experts.

Five experts participated in this survey and sent back their feedback on pairwise comparisons of five ratings. Table 3. 6 forms the matrix showing the value of importance for each rating over another provided by the first participant. The diagonal value (1) shows equal importance. Likewise, responses from five experts were collected. The adopted excel AHP tool uses *weighted geometric mean* of the decision matrices components to combine all five participants' inputs and get an aggregated group matrix. The findings are presented in Chapter 4.

Table 3. 6 AHP Pairwise comparison matrix for ratings (Participant-1)

| Participant 1 |           |           | Date: 15-09-20 |              |          |
|---------------|-----------|-----------|----------------|--------------|----------|
|               | Excellent | Very good | Good           | Satisfactory | Poor     |
| Excellent     | <b>1</b>  | 2         | 3              | 4            | 7        |
| Very good     | 1/2       | <b>1</b>  | 2              | 3            | 5        |
| Good          | 1/3       | 1/2       | <b>1</b>       | 2            | 4        |
| Satisfactory  | 1/4       | 1/3       | 1/2            | <b>1</b>     | 3        |
| Poor          | 1/7       | 1/5       | 1/4            | 1/3          | <b>1</b> |

### 3.4.2.3. Calculating weights

Row geometric mean method (RGMM) has been used to calculate the priorities of each expert in the excel worksheet. The excel tool used also provides the aggregated group matrix result combining inputs from all experts. For this it applies weighted geometric mean method of the pairwise comparison matrices values using the individual expert's weight. The formula is as follows-

$$C_{ij} = \exp \frac{\sum_{k=1}^N W_k \ln a_{ij(k)}}{\sum_{k=1}^N W_k}$$

Where,  $C_{ij}$  = Consolidated cell value for priorities from all experts

$N$  = Number of components

$k$  = Number of experts

$a_{ij(k)}$  = Pairwise comparison matrices values

$W_k$  = Individual expert's weight

After combining the value of importance, the matrix is normalized by dividing each cell value by its' respective column total. finally, the components' weights were calculated by averaging the weights of the respective rows for each component. The findings are presented in Chapter 4.

#### 3.4.2.4. Calculating the consistency

The final step in AHP is to ensure that the values in the pair-wise matrix (before normalizing) are consistent. For this purpose, firstly, the ratio is calculated by dividing the sum of the respective components' rows by their respective weights. The  $\lambda_{max}$  is the average of all the ratios which is required to find the consistency index value. The formula to calculate CI is as follows-

$$\text{Consistency Index (CI)} = \frac{\lambda_{max} - n}{n - 1}, \text{ where } n = \text{number of components}$$

Finally, the value of CI is used to measure the degree of consistency in pairwise comparison matrix (Pehlivan et al., 2017). The consistency ratio (CR) is calculated by comparing the CI to the Saaty scale's random index (RI) value (Table 3. 7). CR is found by dividing the CI with RI as shown in the following formula. For the present study, the RI value is 1.49 for 10 number of HCR components. The accepted value of CR is  $<0.1$  and  $>0$  (Saaty and Vargas, 1980) to establish a consistent weight of importance for the ten selected components in AHP measurement.

$$\text{Consistency Ratio (CR)} = \frac{CI}{\text{Random Index (RI)}}$$

Table 3. 7 Random Index (RI) table

| Random Index (RI) Table |      |      |      |      |      |      |      |      |      |      |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| n                       | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| RI                      | 0.00 | 0.00 | 0.58 | 0.90 | 1.12 | 1.24 | 1.32 | 1.41 | 1.45 | 1.49 |

**Source:** Saaty and Vargas (1980)

### 3.4.3. Phase-III: Developing research instrument and survey

The primary goals of Phase III include developing the HCR methodology and its' application to evaluate and rate halal-certified restaurants in Malaysia, constructing a research questionnaire to assess the application and validity of the HCR tool, and conducting a survey and collecting data.

#### 3.4.3.1. Developing HCR methodology

The methodology of HCR involves the application of absolute measurement approach of AHP as explained earlier in this chapter. Chapter 4 employs this methodology and presents the findings of ranking and rating of halal-certified restaurants in Malaysia. Chapter 4 is the achievement of the 3<sup>rd</sup> objective of present research. The steps showed in chapter 4 can be followed and used to rank and rate any number of restaurants in future. The development of survey questionnaire is described in following section.

### **3.4.3.2. Developing questionnaire**

There were three distinct sections of the questionnaire. The initial part of the survey was dedicated to collect information about the respondents' profiles. The second component of the questionnaire was the major section, and its purpose was to study and evaluate the halal compliance performance of the Malaysian restaurants that have been certified as halal. At the end of the survey, items were included to collect data regarding the business performance of the respondents.

#### **3.4.3.2.1. Respondents' profile**

The target population of the survey was the managers and/or owners of halal-certified restaurants in Malaysia. When trying to determine how closely the sample represents the population, it is helpful to have a good understanding of how the demographic features of the respondents are distributed. However, since the focus of the survey was to assess the halal compliance practices, the questions regarding respondents' profiles were limited to the following six items-

- [1] **Gender:** Gender of the managers and/or owners of halal-certified restaurants in Malaysia.
- [2] **Education:** Highest level of education completed by the respondents. e.g., Primary, Secondary, Bachelor, Master, and Ph.D.
- [3] **Religion:** Whether the owner and majority of the business staffs are Muslim or non-Muslim
- [4] **State:** In which state of Malaysia the restaurant is located
- [5] **Annual Sales Turnover:** This is to categorise the respondents according to the MSME definition by SME Corp. Malaysia.
- [6] **Number of Employees:** Total number of full-time employees. This is to categorise the respondents according to the MSME definition by SME Corp. Malaysia.



#### 3.4.3.2.2. Assessing Halal Compliance

This section represents the second part of the questionnaire, Section B. The best halal compliance practice by the halal-certified restaurants has been assessed under the selected 10 HCR components (Table 3. 1). Respondents were asked to provide their feedback based on a five-point Likert scale against all items under respective HCR components as shown in Table 3. 8.

Table 3. 8 HCR components and measuring scale

| HCR components                                     | Measuring scales                                                                                                                                                                                     |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [1] Knowledge on halal and <i>toyyib</i> (KNW)     | <b>Scale-1:</b> Excellent -5; Good -4; Average -3; Satisfactory -2; Poor -1<br>Source: He et al., (2022); Memon et al. (2015); Shuvo (2018)                                                          |
| [2] Management Responsibility (MGT)                | <b>Scale-2:</b> Strongly disagree- 1; Disagree -2; Neutral -3; Agree -4; Strongly Agree -5<br>Source: Allen, (2007); Boone, (2012); M. Abdullah et al. (2022)                                        |
| [3] Premises, location and design (PLD)            |                                                                                                                                                                                                      |
| [4] Hygiene and food safety (HFS)                  | <b>Scale-3:</b> Application under processing -1; Grade D -2; Grade C -3; Grade B -4; Grade A -5<br>Source: Food Safety and Quality Division Malaysia (2009); Ebdali et al. (2021); Woh et al. (2016) |
| [5] Human resources and culture (HRC)              |                                                                                                                                                                                                      |
| [6] Branding, packaging, and labelling (BPL)       |                                                                                                                                                                                                      |
| [7] Image and level of customer satisfaction (ICS) | <b>Scale-4:</b> Very poorly satisfied- 1; Poorly satisfied -2; Average-3; Satisfied-4; Very satisfied -5<br>Source: Maniruzzaman et al. (2021); Pinar et al. (2020); Tansakul and Yenradee (2020)    |

|                                             |                                                                                                                                                                                      |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [8] Legal requirement (LR)                  | <b>Scale-5:</b> One star- 1; Two stars -2; Three stars-3; Four stars-4; Five stars-5                                                                                                 |
| [9] Green practice and sustainability (GPS) | Source: Crescent Rating (n.d.); Nguyen and Altan (2011)                                                                                                                              |
| [10] Halal supply chain (HSC)               | <b>Scale-6:</b> Serious offence detected- 1; Major offence detected -2; Minor offence detected -3; Offence during internal audit only-4; No offence at all -5<br>Source: KPMG (2020) |

#### 3.4.3.2.3. *Assessing Business performance (BP)*

One of the variables in the proposed HCR model in the present research is the Business Performance (BP) of halal-certified restaurants. The literature review of the study has made it possible to include the following two dimensions for measuring the BP of MSME owners in the halal restaurant sector in Malaysia.

##### a) Financial performance

Business owners are often hesitant to provide objective measure for their financial performance, therefore, subjective performance scale is used in this research. This is a strategy that is often used in business literature, and earlier research has backed this approach as a viable and trustworthy approach (Deniz et al., 2011). Hence, the present study investigated the satisfaction level of the respondents from five different financial aspects (return on assets, gross profit ratio, net profit ratio, current ratio, and debt ratio). The responses were collected based on a five-point Likert scale as shown in Table 3. 9.

Table 3. 9 Measuring financial performance

| Financial measures                                               | Scale                                                                                                                                                                                                |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [1] Return on Assets (ROA): Net income over average total assets | <ul style="list-style-type: none"> <li>– Very highly satisfied- 5</li> <li>– Highly satisfied- 4</li> <li>– Average- 3</li> <li>– Poorly satisfied- 2</li> <li>– Very poorly satisfied- 1</li> </ul> |
| [2] Gross Profit Ratio: Profit before tax over Net Sales         |                                                                                                                                                                                                      |
| [3] Net Profit Ratio: Profit after tax over Net Sales            |                                                                                                                                                                                                      |
| [4] Current Ratio: Current assets over Current liabilities       |                                                                                                                                                                                                      |
| [5] Debt ratio = Total liability over Total Assets               | Source: Mendoza (2015); Gibson et al. (2014); Deniz et al. (2011); Cooper and Artz (1995)                                                                                                            |

b) Non-financial performance

Business performance was also measured from non-financial aspects of the restaurants. The non-financial performance of halal restaurants was investigated the satisfaction level of the respondents from five different non-financial aspects (customer satisfaction, customer retention, waiting time satisfaction, product innovation, and competitive position). The responses were collected based on a five-point Likert scale as shown in Table 3. 10.

Table 3. 10 Measuring non-financial performance

| Non-financial measures             | Measuring scale                                                                                                                                                                                      |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [1] Level of customer satisfaction | <ul style="list-style-type: none"> <li>– Very highly satisfied- 5</li> <li>– Highly satisfied- 4</li> <li>– Average- 3</li> <li>– Poorly satisfied- 2</li> <li>– Very poorly satisfied- 1</li> </ul> |
| [2] Customer retention             |                                                                                                                                                                                                      |
| [3] Waiting time satisfaction      |                                                                                                                                                                                                      |

|                          |                                                                                                                         |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------|
|                          | Source: Gilbert et al. (2004); Mohsan et al. (2011); Gibson et al. (2014); Deniz et al. (2011); Cooper and Artz (1995). |
| [4] Product innovation   | Much better than competitors (5) to Much worse than competitors (1)                                                     |
| [5] Competitive position | Source: Alegre et al., (2006); Richard A., (2007); Ting et al. (2019)                                                   |

#### 3.4.3.2.4. Questionnaire design

After evaluating a variety of existing study articles, standards, and rating components pertaining to restaurant sectors, the questionnaire was constructed. In addition, in order to improve the instrument, comments from three academic staff members, who were well-versed in the topic, were compiled and taken into consideration. In addition, a pilot survey among 30 halal-certified restaurants was conducted to finalise the instrument (Appendix-I and Appendix-II). Table 3.11 shows the questionnaire design, which shows the various sections, the number of questions that fall under each section, the analytic codes for those items, and the references that correspond to the selection of items. There were a total of 83 items that needed to be investigated across three distinct aspects. The first section of the questionnaire consisted of six questions concerning the respondents' profiles. In the second part of the questionnaire, the halal compliance performance of the restaurants was evaluated according to 10 HCR components. These components contained a total of 67 items of halal compliance practises that were expected to be practised by the halal-certified restaurants. In the last step, Section C gathered information regarding the business performance of MSME proprietors of halal-certified restaurants with regard to both financial and non-financial elements of their operations. As was mentioned before in Table 3.9 and Table 3.10, this section had a total of ten different items.

Table 3. 11 Questionnaire design

| Section                       | Item # | Section Title                                         | References                                                                                                                                                                           |
|-------------------------------|--------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                             | 1-6    | Respondents' profile                                  | International Trade Centre (2019); Razak et al. (2018); Abdullah et al. (2020); Noordin et al. (2009)                                                                                |
| B: Measuring Halal compliance |        |                                                       |                                                                                                                                                                                      |
| B1                            | 7-14   | Knowledge on halal and <i>toyyib</i> (KNW)            | MS1500:2019 (3 <sup>rd</sup> revision); Zailani et al. (2011); Ahmad, (2018); Syazwan et al. (2017); Zannierah et al. (2012); Rahman et al. (2012); Sorooshian and Dahan (2013).     |
| B2                            | 15-22  | Management Responsibility (MGT)                       | MS1500:2019 (3 <sup>rd</sup> revision); Baharuddin and Ismail (2018); Ahmad (2018); Noordin et al. (2009); MS2610:2015                                                               |
| B3                            | 23-31  | Premise (PLD):<br>Premise layout, location and design | MS1500:2019 (3 <sup>rd</sup> revision); BeSS certification requirements; Zannierah and Marzuki (2016);                                                                               |
| B4                            | 32-42  | Hygiene and Food Safety (HFS)                         | MS1500:2019 (3 <sup>rd</sup> revision); Salindal (2019); Salindal (2018); Food Safety and Quality Division Malaysia (2009); BeSS certification requirements; Zannierah et al. (2012) |

|                              |       |                                                |                                                                                                                                                                                                                                                                                       |
|------------------------------|-------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B5                           | 43-47 | Human resources and culture (HRC)              | Baharuddin and Ismail (2018); ISO, 2018; Ahmad (2018); Noordin et al. (2009)                                                                                                                                                                                                          |
| B6                           | 48-52 | Branding, packaging, and labelling (BPL)       | MS1500:2019 (3 <sup>rd</sup> revision); Salindal (2019); Salindal (2018); Noordin et al. (2009)                                                                                                                                                                                       |
| B7                           | 53-55 | Image and level of customer satisfaction (ICS) | Fatimah et al. (2011); Garg and Joubert, (2004); Perform (2019).                                                                                                                                                                                                                      |
| B8                           | 56-61 | Legal requirement (LR)                         | MS1500:2019 (3 <sup>rd</sup> revision); MS2610:2015; MHMS 2020                                                                                                                                                                                                                        |
| B9                           | 62-67 | Green practice and sustainability (GPS)        | Tan et al. (2019); Fatimah et al. (2011); BREAM (1990)                                                                                                                                                                                                                                |
| B10                          | 68-73 | Halal supply chain (HSC)                       | MS1500:2019 (3 <sup>rd</sup> revision); Salindal (2019); Salindal (2018); Ahmad (2018); Rahman et al. (2012); Sorooshian and Dahan (2013)                                                                                                                                             |
| C: Business Performance (BP) |       |                                                |                                                                                                                                                                                                                                                                                       |
| C-1                          | 74-78 | Financial performance                          | Abdullah et al. (2014); AbTalib, (2018); Fowowe (2017); Johansson et al. (2015); Lukviarman (2008); (Fairman and Yapp, 2005; Chiliya and Roberts-Lombard (2012); Psomas and Kafetzopoulos (2014); Gibson et al. (2014); Deniz et al. (2011); Cooper and Artz (1995); Salindal (2015). |

|     |       |                           |                                                                                                                                                                                                       |
|-----|-------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C-2 | 79-83 | Non-financial performance | Ahmed, (2015); Lukviarman, (2008); Psomas and Kafetzopoulos, (2014); Gilbert et al. (2004); Mohsan et al. (2011); Gibson et al. (2014); Deniz et al. (2011); Cooper and Artz (1995); Salindal (2015). |
|-----|-------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### **3.4.3.3. Survey and data collection**

This part of the methodology discusses the research population, the location of the study, the sampling strategy, the sample size, the pilot survey, and the means for collecting data.

#### **3.4.3.3.1. Research population**

To obtain the appropriate information for the research objectives, a list of halal-certified restaurants and/or food premises was collected from JAKIM. The information was extracted from Halal Malaysia's official online portal. As of January 2022, a total of 9,771 halal certified restaurants and/or food premises were spread across Malaysia. All these establishments are certified under 1,583 companies. The email addresses of all the companies were extracted one by one from the website. To keep the sample size within the scope of the present study, the population of this research was considered to be the owners or managers of the restaurants and/or food premises under 1,583 companies. The statistical finding on the population is presented in Table 3. 12. Simultaneously, Figure 3. 6 illustrates the percentage (%) of total halal-certified restaurants and/or food premises in different states of Malaysia.

Table 3. 12 Population of the study

| No<br>.       | State           | No. of<br>Companies | No. of Hotels<br>and Resorts | No. of Food<br>Premises | Percentage (%) of<br>total food premises |
|---------------|-----------------|---------------------|------------------------------|-------------------------|------------------------------------------|
| 1             | Johor           | 143                 | 66                           | 1118                    | 11.4%                                    |
| 2             | Kedah           | 68                  | 30                           | 350                     | 3.6%                                     |
| 3             | Kelantan        | 31                  | 22                           | 194                     | 2.0%                                     |
| 4             | Melacca         | 82                  | 78                           | 403                     | 4.1%                                     |
| 5             | Negari Sembilan | 69                  | 30                           | 401                     | 4.1%                                     |
| 6             | Pahang          | 141                 | 112                          | 472                     | 4.8%                                     |
| 7             | Penang          | 145                 | 97                           | 692                     | 7.1%                                     |
| 8             | Perak           | 132                 | 43                           | 638                     | 6.5%                                     |
| 9             | Sabah           | 56                  | 57                           | 393                     | 4.0%                                     |
| 10            | Sarawak         | 195                 | 96                           | 533                     | 5.5%                                     |
| 11            | Selangor        | 286                 | 140                          | 2654                    | 27.2%                                    |
| 12            | Terengganu      | 80                  | 55                           | 243                     | 2.5%                                     |
| 13            | WP Kuala Lumpur | 140                 | 107                          | 1539                    | 15.8%                                    |
| 14            | WP Labuan       | 2                   | 1                            | 14                      | 0.1%                                     |
| 15            | WP Putrajaya    | 13                  | 14                           | 127                     | 1.3%                                     |
| <b>Total=</b> |                 | <b>1583</b>         | 948                          | 9771                    |                                          |

**Source:** Halal Malaysia Directory, retrieved from <http://www.halal.gov.my/v4/index.php> on Jan 2022



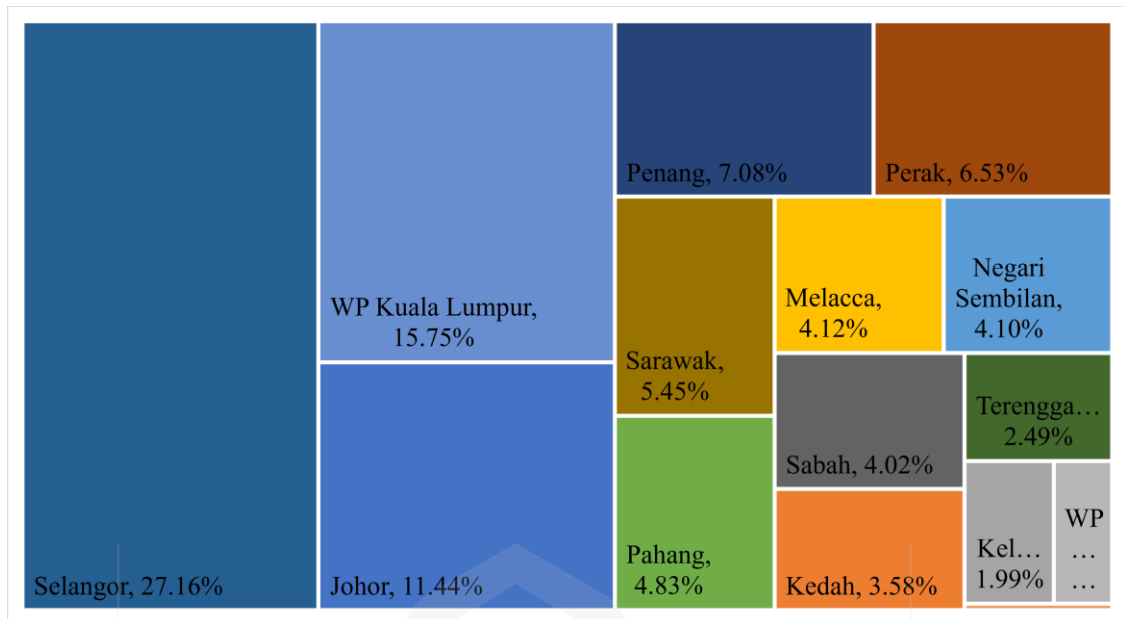


Figure 3. 6 Percentage (%) of total halal-certified restaurants and/or food premises in different states of Malaysia

#### 3.4.3.3.2. Research location

From the population statistics presented in Table 3. 12 and its spread across Malaysia (Figure 3. 6), it can be observed that majority of the population (54.35%) are situated in three states namely Selangor (27.16%), Kuala Lumpur (15.75%), and Johor Bahru (11.44%). As a result, the three states were the primary focus of the physical distribution of the hard copy questionnaire. However, the online questionnaire was distributed to MSME owners of halal-certified restaurants across Malaysia. Figure 3. 7 illustrates the map of Malaysia showing the three prime locations of this research.

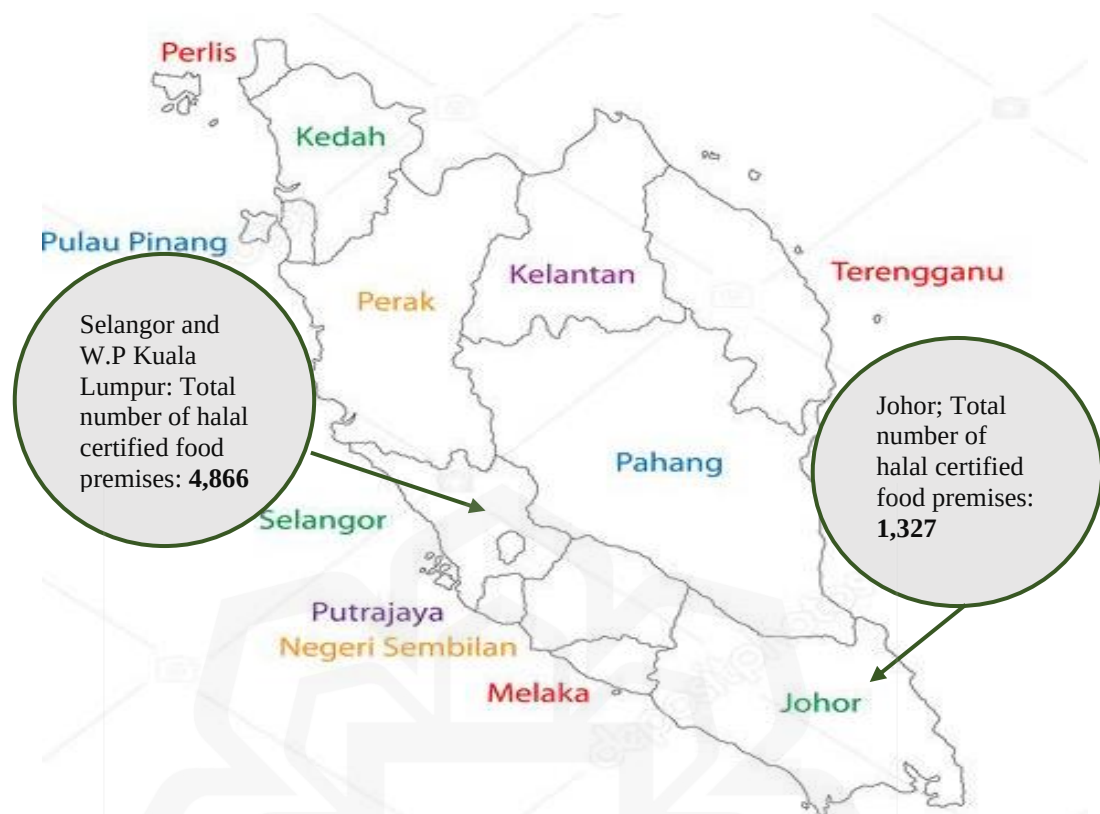


Figure 3. 7 Map of Malaysia showing the prime location of the survey.

**Source:** Halal Malaysia Directory, retrieved on 28<sup>th</sup> Jan 2021 from <http://www.halal.gov.my/v4/index.php>

#### 3.4.3.3.3. Sampling strategy

When doing research in the social and behavioural sciences, researchers often have a choice between four distinct sampling approaches. These techniques for collecting samples are known as probability sampling, purposive sampling, convenience sampling, and mixed methods sampling (Teddlie and Yu, 2007). The survey was carried out using a convenient sampling approach since, taking into consideration the constraints (movement restriction due to COVID-19, time and financial constraint) and the breadth of the current study, we had to. Concurrently, the respondents were chosen both at random and deliberately with the intention of covering only halal-certified restaurants. Convenient sampling technique is a non-probability sampling method that allows the researcher to select the sample (respondents) from the target population

convenient to reach or contact (Raifman et. al, 2022; Saunders et.al., 2012; Lavrakas, 2013).

#### 3.4.3.3.4. Sample size

To determine the sample size, the present study applies Slovin's formula of non-probability sampling method which has been adopted from the study by Ryan (2013), and Zaroh (2017). The formula is as follows-

$$n = \frac{N}{1 + N(e)^2}$$

Where,

n = number of samples to be studied=?

N = Number of halal-certified restaurants (companies) = 1,583

e = alpha value (0.05) at 95% confidence level

Considering the total number of halal certified restaurants and/or food premises (9,771) would result in a larger sample size (384). It was hard to get responses from such a large sample size because of things like COVID-19, the researcher being an international student who didn't know the area well and couldn't communicate well in the local language, lack of time, and lack of money. Hence, we considered the number of companies (1,583), under which all the food establishments are certified, as our population. Applying the above formula, the calculated sample size for the present study was expected to be approximately 319. The researcher was able to collect usable data from 320 respondents from both online and offline surveys. Therefore, all the analysis of the present research was based on the sample size of 320.

#### 3.4.3.3.5. *Pilot study*

A pilot study is the first phase of a complete research procedure. It is an investigation of a more limited scope that contributes to the design and adjustment of the main research. To be more precise, while conducting large-scale clinical research, it is common practise to conduct a pilot or smaller-scale study prior to the main trial in order to evaluate the validity of the results (In, 2017). Pilot study is significant for several reasons. Firstly, it contributes to refining the research questions and examine the methodology and design of the planned research (Teijlingen and Vanora, 2001). Pilot survey could raise red flags for the researcher about problems that might have a detrimental impact on the study (Malmqvist et al., 2019). Additionally, researcher may gain knowledge about a variety of approaches that are relevant to the research (Kezar, 2000). Pilot study also helps examining the applicability of the questionnaire using a small sample and determining whether or not the study can be accomplished so that the researchers won't be wasting their time or their money (In, 2017). There is no consensus on sample size required for a pilot study. Jaiyeoba (2018) used a sample size of 40 in his pilot study. Simultaneously, a sample size of 10 to 20 or 30 was suggested by Saunders et al. (2009) and Sekaran (2003).

After deciding the sample size and developing the questionnaire, a pilot survey was carried out among 30 halal-certified restaurants in Selangor. During the peak of the COVID-19 epidemic, the survey began on June 15, 2020, and continued until September 30, 2020. Because of the continuous mobility limitations at the time, collecting 30 responses required an excessive amount of time. As a result of this experience, we decided to conduct the survey utilising an online platform, Google Form. A QR code linking to the Google Form was added on the front page of the questionnaire for any respondent who would want to fill it out online. It was observed that the participants in the pilot study were capable of understanding the questions and responding on their own initiative. Additionally, some errors were detected, and few items were identified as redundant. Nonetheless, the questionnaire did not have any significant issues overall. After making the necessary changes and final touches to the questionnaire, it was translated into Malay for those respondents who indicated their

preference to respond in Malay. These questionnaires are attached as Appendix-I (English version) and Appendix-II (Malay version).

#### *3.4.3.3.6. Data collection*

Data collection was severely impacted by COVID-19 restrictions. Malaysia's federal government adopted the Malaysia Government Movement Control Order (MCO) on 18 March 2020 in response to the COVID-19 pandemic (John, 2020). On the 8th of March 2022, the government of Malaysia made the announcement that the country would enter the endemic phase on the 1st of April 2022 (Joseph, 2022). Over the course of two years during the peak of pandemic, the researcher primarily collected data through online channels, including email, WhatsApp, Facebook, and Telegram, by sending out the questionnaire to participants. However, in May 2022, when movement restrictions were lifted, the study resumed, and data collection was expanded to include personal visits to halal-certified restaurants. The questionnaire was distributed in person to participants in Selangor, Kuala Lumpur, and Johor Bahru states, allowing for a more comprehensive collection of data.

Finally, we were able to collect a total of 326 responses, combining both online (171 responses) and offline (155 responses). The questionnaire was sent to a total of 633 recipients through email only. In addition, 300 hardcopies were distributed personally and through friends and family. All online responses were accepted, as the Google form did not allow a participant to go to the next section without filling out all the questions in the current section. However, six incomplete responses were discarded that were collected offline. As a result, a total of 320 responses were included in the statistical analysis.

#### **3.4.4. Phase-IV: Application and validation of HCR model**

The final objective of the study is to validate the model of best practise for HCR. The data analysis required the use of a variety of tools, such as Microsoft Excel, SPSS 26.0,

and the SmartPLS 3.2.8 version of software, so that the goal could be accomplished. A flow chart of different types of data analysis, that have been adopted in present research, is illustrated in Figure 3. 8. The following sections are the explanation of many approaches of analysis that have been utilised in present research.

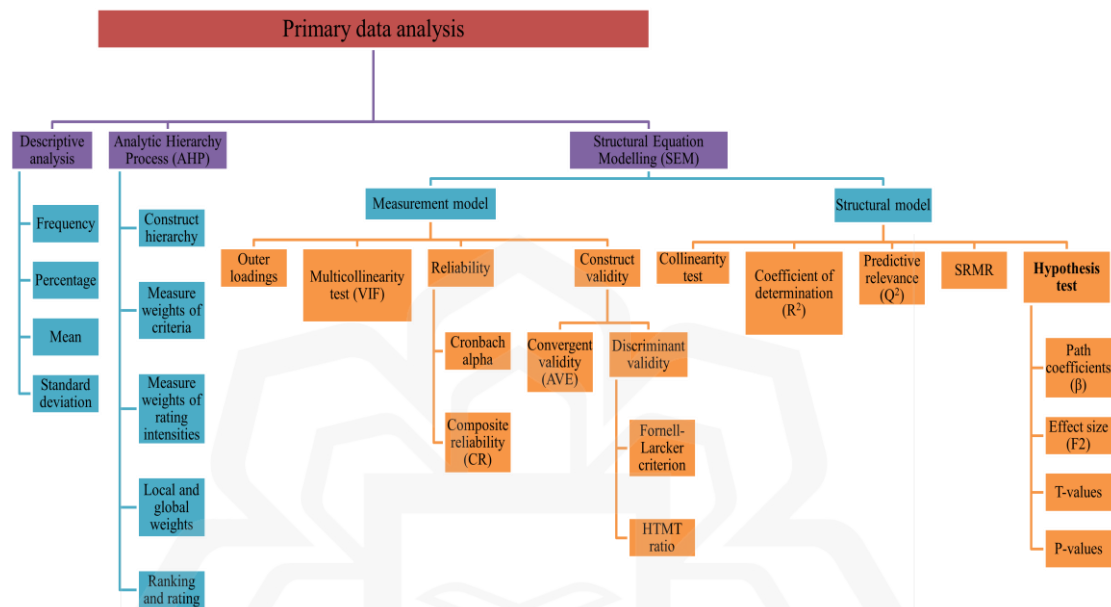


Figure 3. 8 Primary data analysis flowchart

#### 3.4.4.1. Descriptive data analysis

Descriptive analysis is a statistical technique that is used to summarize and organize data in a meaningful way. There are several approaches that can be included in a descriptive analysis. The output of descriptive analysis can be used to describe and summarize the characteristics of the data set and to identify patterns and trends in the data. The researcher employs the following approaches using data analysis software SPSS 26.0.

- a) **Central tendency:** This refers to measures of the centre of the data, such as the mean, median, and mode.

- b) Frequency distributions:** This refers to the number of occurrences of each value in the data set, which can be presented in a histogram or a frequency table.
- c) Percentage:** This refers to the proportion of frequency of a certain response to the total number of respondents.
- d) Standard deviation:** Standard deviation is a statistical measure of the dispersion or spread of a data set. It is a measure of how much the individual values in a data set differ from the mean of the data set. The standard deviation is useful for comparing the dispersion of different data sets, as well as for understanding the variability of a single data set.

#### ***3.4.4.2. Application of HCR methodology***

The HCR methodology that has been adopted in present research is the rating mode of AHP. The steps of AHP have been explained in earlier section in the explanation of the methodologies adopted in Phase-II. The findings from Phase-II are used in Phase-IV of the research and the AHP steps are applied to rank and rate the 320 halal-certified restaurants that have been surveyed in this research. Microsoft Excel has been used to make the calculation in different steps of the method. This stage of Phase-IV achieves the 3<sup>rd</sup> objective of the research.

#### ***3.4.4.3. HCR model validation***

A family of statistical models known as Structural Equation Modelling (SEM) that aims to explain the correlations between multiple variables within a research model was. The measurement model and the structural model are used to make the SEM, which is used to look at how well the models fit together and how consistent the theoretical and estimated models are (Hair et al., 2017). Present research assesses both the measurement model and structural model of the proposed HCR model based on the analysis output

employing the SmartPLS V.3.2.8 software. The following analyses were carried out to validate the model.

#### 3.4.4.3.1. *Measurement model*

In structural equation modelling (SEM), the measurement model refers to the part of the model that specifies how the observed variables in the study are related to the latent (unobserved) variables. Assessing the measurement model involves evaluating the fit of the model to the data and determining the strength of the relationships between the observed and latent variables (Santos and Brito, 2012). There are several criteria that can be used to assess the measurement model in SEM analysis. It is important to note that these criteria should be considered together, as no single criterion is sufficient to evaluate the measurement model (Pavlov et al., 2021). Present study considered the following criteria to assess the measurement model-

- a) **Factor loadings:** The factor loadings represent the strength of the relationships between the observed variables and the latent variables. In the fields of social science, a factor loading 0.5 and above is acceptable and considered to be statistically significant (Arifin and Yusoff, 2016; Gefen and Straub, 2005).
- b) **Multicollinearity test:** Multicollinearity refers to high intercorrelations in a multiple regression model. Multicollinearity can lead to skewed or misleading conclusions when trying to predict or understand a dependent variable in a statistical model (Edeh et al., 2022). In regression analysis, the level of multicollinearity may be measured using a variable known as a variance inflation factor (VIF). The VIF value between 5 and 10 suggests a moderate correlation, whereas VIF value more than 10 is an indication of a strong correlation that cannot be tolerated among model predictors (James et al., 2013).
- c) **Reliability:** The term "reliability" is used in statistical analysis to describe how consistent the results are when the same scale are obtained. The reliability of the measurement model can be assessed using indices such as the composite



reliability (CR) and the average variance extracted (AVE). The two most commonly used methods for establishing reliability include Cronbach Alpha and Composite Reliability. Both of the reliability requirements need to have a value that is more than 0.70 as a rule of thumb (Imtiyaz et al., 2022; Khare et al., 2019; Rahayu et al., 2022) to establish the reliability test.

**d) Construct validity:** Generalization is intrinsic to both construct and external validity. Construct validity refers to the extent to which the used measures (often questionnaires) really evaluate the hypothesis or theory they are evaluating. There are two types of construct validity: convergent validity and discriminant validity. When both convergent and discriminant validity hold, construct validity is established statistically using PLS-SEM.

(i). **Convergent validity:** The idea of convergent validity indicates how well a new scale is related to existing variables and other measures of the same construct. Convergent validity is determined by monitoring the AVE value. The AVE of a construct is the proportion of measurement error variance to construct variance. As a general guideline and for proper convergence, it is highly recommended that an AVE of at least 0.50 be attained (Al-Okaily et al., 2020; Barnett and Sergi, 2022; Nasution et al., 2020). The AVE for this research is presented in Chapter 6, and the method shown below outlines how the calculation was carried out.

$$AVE = \sum_{i=1}^n \lambda_i^2 \div n$$

Where,

AVE = Average Variance Extracted

n = number of indicators

$\lambda$  = Standardised factor loadings

(ii). **Discriminant validity:** The degree to which a test is not connected to other tests in which the constructs being measured are different is referred to as its discriminant validity. It is shown by the evidence that measurements of constructs that, on the basis of theory, should not be found to have a high degree of correlation to one another are, in fact, not found to have a high degree of correlation to one another (Hubley, 2014). The Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio are the determinants that are used the most often in variance-based SEM analysis. These criteria are used to determine whether or not a discriminant validity is established (Henseler et al., 2015). Both of these criteria were taken into consideration in order to verify the measurement model used in the present study.

#### 3.4.4.3.2. Structural model

In structural equation modelling (SEM) analysis, the structural model is typically estimated after the measurement model has been identified and assessed. In SEM, the structural model refers to the part of the model that specifies the relationships between the latent (unobserved) variables in the study. The structural model specifies how the latent variables are related to each other and to the observed variables in the study. There are a number of criteria that have been used by the research scholars to assess the structural model. However, the present study evaluates the following criteria to validate the proposed BPHCR model. It is important to note that these criteria should be considered together, as no single criterion is sufficient to evaluate the structural model.

**a) Collinearity test:** Evaluation of potential collinearity among predictor constructs in structural model regressions is the first step in PLS-structural SEM's model assessment (Hair et al., 2021). This is to confirm that the model estimates are not impacted by large levels of collinearity by inspection of variance inflation factor (VIF) values. The absence of a collinearity problem is indicated by a value of VIF that is less than 5.0 (Hair et al., 2017; Hair et al., 2021).

- b) Coefficient of determination ( $R^2$ ):** In SEM, it is a measure of the amount of variance in a latent variable that is explained by the observed variables in the model. It is calculated as the proportion of variance in the latent variable that is accounted for by the observed variables and is expressed as a value between 0 and 1. A higher  $R^2$  value indicates a better fit of the model to the data. To determine whether or not there is a predictive ability, the value of  $R^2$  must be equal to or higher than 0.10 (Falk and Miller, 1992). According to Urbach and Ahlemann (2010a), the value of  $R^2$  ought to be sufficiently high for the model to have a minimal degree of explanatory power.
- c) Predictive relevance ( $Q^2$ ):** It is a measure of the ability of the model to predict the values of an unobserved (out-of-sample) variable based on the values of the observed variables in the model. It is calculated as the proportion of variance in the unobserved variable that is predicted by the observed variables. As a measure of the structural model's efficacy, it determines how well the latent variables predict the manifest variables that make up the block in question. According to the explanation provided by Hair (2014), the independent construct has predictive importance for the latent variable if and only if the  $Q^2$  value is greater than zero (0).
- d) Standardised residual mean residual (SRMR):** It is a measure of the fit of the model to the data. It is calculated as the average of the standardized residuals, which are the residuals (prediction errors) divided by their standard errors. A smaller SRMR value indicates a better fit of the model to the data. The accepted SRMR value should be  $\leq 0.09$  (Cho et al., 2020; Hair et al., 2017) to conclude a good (Model) fit. However, according to Pavlov et al. (2021) and Ullman and Bentler (2004), a good compatibility is indicated by a result of 0.08 or less than 0.10.
- e) Hypothesis test:** A research hypothesis, which may also be referred to as a "scientific hypothesis," is a statement that discusses the anticipated results of an investigation. To test the hypothesis, the significance and relevance of the path coefficients ( $\beta$ ) were assessed. Testing the significance of the path coefficients

involved using the bootstrapping method and inspecting t-values or bootstrapping confidence intervals and effect size ( $F^2$ ). In order to answer RQ6 and RQ7 and reach the goal of this study, RO4, as stated in Chapter 1.

### **3.5 ETHICAL CONSIDERATION OF THE RESEARCH**

The ethical component of any study is regarded as one of the most crucial factors. The omission of ethical considerations can result in the rejection of research and thesis papers. Therefore, this research incorporates the following ethical considerations stated by Bryman and Bell (2007).

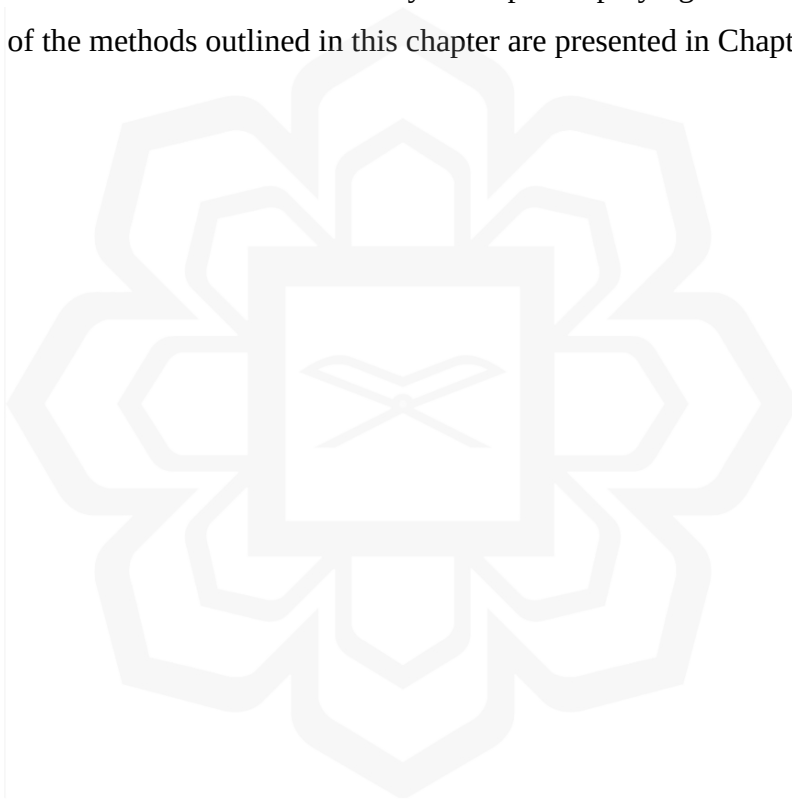
- The respondents were in no way harmed in anyway.
- The respondents gave their full permission or consent to participate the survey.
- The confidentiality of the data, individuals, and organisations had been ensured, as well as the preservation of respondents' privacy. It was made sure that there was no exaggeration or deception about the study aims.
- All affiliations with organisational structures, research funds, and potential conflicts of interest have been declared. i.e., Honesty and transparency have been maintained.
- The use of false information and the slanted presentation of findings have been avoided.

Additionally, as a student of IIUM, the researcher has adopted the IIUM codes of ethics for research publications as well as for students.

### **3.6 CHAPTER SUMMARY**

This chapter explains the methodology employed in order to achieve the objectives of the study. The research was carried out in Malaysia, where the target respondents were MSME owners and/or managers of halal-certified restaurants. A convenient sampling technique was adopted after obtaining the list of halal-certified restaurants from Halal Malaysia's official portal. The absolute measurement approach of the AHP method has

been adopted to rank and rate halal compliance practises. To validate the model of BPHCR, primary data was collected from 320 respondents using a self-administered structured questionnaire that was developed and finalised by expert review and a pilot study. The final objective of the study is to validate the model of best practise for HCR. To attain the goal, the data analysis involves the application of multiple tools, such as Microsoft Excel, SPSS 26.0, and SmartPLS 3.2.8. The measurement model and the structural model are used to assess the SEM, which is used to look at how well the models fit together overall and how consistent the theoretical and estimated models are. The present research assesses both the measurement model and structural model of the proposed HCR model based on the analysis output employing SmartPLS V.3.2.8. The findings of the methods outlined in this chapter are presented in Chapters 4, 5, and 6.



## **CHAPTER 4**

### **HALAL COMPLIANCE RATING (HCR) TOOL**

#### **4.1. CHAPTER INTRODUCTION**

This chapter provides a detailed description of the third objective of the present research which is to develop HCR tool applying absolute measurement of Analytic Hierarchy Process (AHP) method. The methodology involves five stages, starting with (1) the selection of HCR components and constructing the hierarchy followed by (2) determining weights of HCR components using relative measuring, (3) develop ranges of rating categories of each HCR components and measuring weights, (4) measuring overall HCR score of one alternative (i.e., restaurant), and finally (5) rating the overall HCR score linguistically. The chapter follows the AHP steps employed by Islam and Madkouri (2018) in assessing and ranking HALMAS parks in Malaysia which is relevant to the present study. The detail calculation and findings of each of the five stages are presented in the following sections.

#### **4.2. STAGE-1: CONSTRUCTING HIERARCHY**

The first stage of AHP process is to construct the hierarchy showing the goal, criteria, and alternatives. In this research the goal is to rank the overall HCR scores of halal-certified restaurants in Malaysia. The criteria are the HCR components, and the alternatives are the 320 halal-certified restaurants across Malaysia. The profile of the surveyed restaurants is presented in the following chapter (Chapter five).

#### 4.2.1. Selecting HCR components

The literature review (chapter 2) of this research identifies ten components of the best practice of HCR in restaurants. In this phase we have used the HCR components and their research codes as presented in previous chapter (Chapter 3, Table 3.1). Additionally, a survey was carried out involving 19 experts to justify the selection of HCR components. The experts were asked to put their opinion regarding to what level they agree or disagree that the selected HCR components are important and relevant for the Halal Compliance Rating (HCR) of restaurants in Malaysia. For this survey, a five-point Likert scale was used where 5 denoted ‘strongly agree; and score 1 denoted ‘strongly disagree’. Figure 4. 1 shows the overall opinion of the 19 experts. The radar chart shows that all experts are in the layer of ‘strongly agree (5)’ or ‘agree (4)’ which justifies that the selected HCR components are important and relevant for halal compliance rating of restaurants in Malaysia.

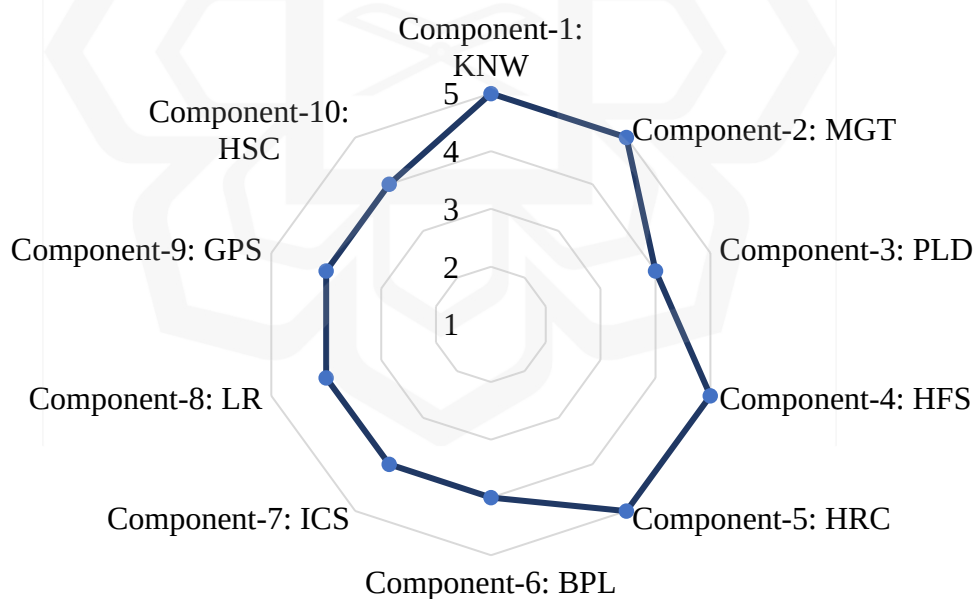


Figure 4. 1 Experts' opinion on the selected HCR components

*Source:* Research survey

### 4.2.3. Hierarchy construct

The AHP hierarchy construct is composed of three levels of hierarchy. The first level is the goal, which in this research is to rank the overall HCR scores of halal-certified restaurants in Malaysia. The ten HCR components form the second level of the hierarchy. And finally, the third level includes all the restaurants as the alternatives that need to be ranked. In the present research, data were collected from 320 halal-certified restaurants in different states of Malaysia. Hence, the alternatives in the construct are limited to 320 restaurants, as shown in Figure 4.2. However, the alternatives can be as many as possible.

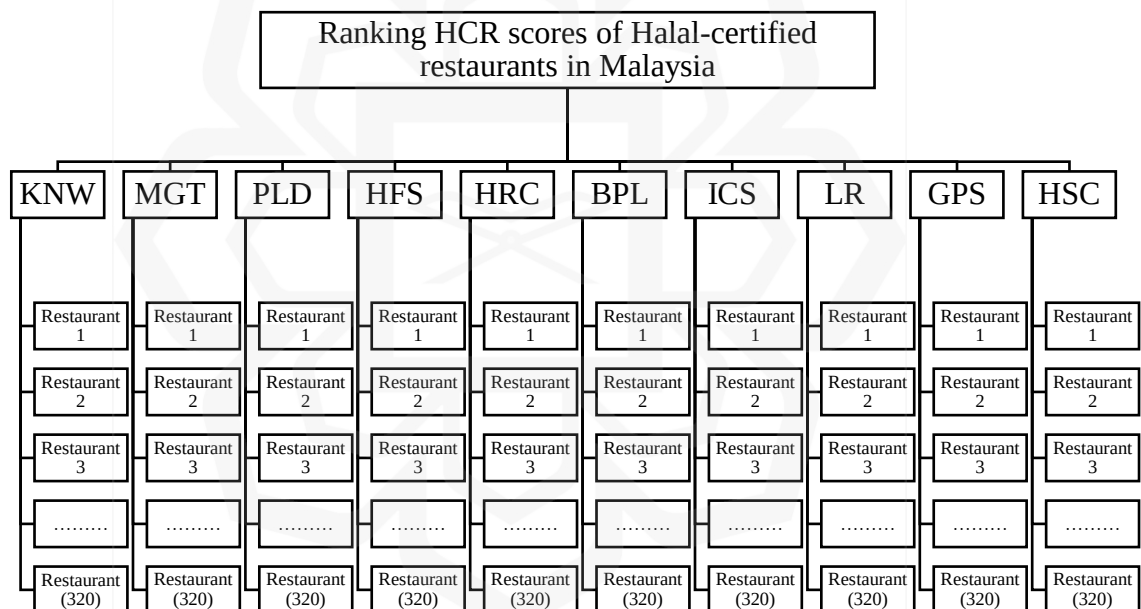


Figure 4. 2 Hierarchic construct of HCR components and alternatives

### 4.3. STAGE-2: MEASURING WEIGHTS OF HCR COMPONENTS

At this stage of the research the identified ten HCR components were weighted applying the Analytic Hierarchy Process (AHP) of prioritising multiple criteria in a decision-



making process as reviewed in chapter 2. To achieve this objective the researcher involved twenty (20) experts in relevant fields from different institutions to participate in the process of pairwise comparison. The twenty experts were academicians, research scholars, and industry specialists from the International Institute of Halal Research and Training (INHART), Food Research Institute of University Putra Malaysia (UPM), University Sains Islam Malaysia (USIM), and food technologist from Sime Darby Oils Professional Sdn Bhd., Malaysia (Please see Appendix-III). The whole process involved the following three steps.

#### **4.3.1. Step 1: Pairwise comparison matrix**

The first step was to prioritise the ten selected components. In this regard the AHP tool (Microsoft Excel format) developed by Goepel (2013) was adopted for this present research work. The tool was sent to the experts along with a request letter (please Appendix-V) to contribute to this research. The tool included the definition of all the ten selected HCR components as shown in Table 4.1. Additionally, there were a total 45 different pairs from the 10 HCR components. Experts were requested to prioritise the components between each pair and put a score based on the Saaty scale.

Out of twenty experts, fifteen (15) responded and sent back their feedback on pairwise comparison. The AHP tool uses weighted geometric mean of the decision matrices components to combine all 15 participants' inputs and get an aggregated group matrix as shown in Table 4. 1. The table forms the matrix showing the value of importance for each HCR component over another. The diagonal value (1) shows the equal importance.

Table 4. 1 AHP Pairwise comparison matrix

|     | KNW  | MGT  | PLD   | HFS  | HRC   | BPL   | ICS   | LR    | GPS   | HSC   |
|-----|------|------|-------|------|-------|-------|-------|-------|-------|-------|
| KNW | 1.00 | 1.00 | 2.25  | 0.78 | 3.00  | 2.88  | 3.22  | 1.33  | 3.33  | 1.75  |
| MGT | 1.00 | 1.00 | 2.00  | 0.71 | 3.17  | 3.00  | 3.14  | 1.00  | 4.50  | 2.25  |
| PLD | 0.44 | 0.50 | 1.00  | 0.33 | 1.71  | 2.00  | 2.13  | 1.00  | 1.14  | 0.71  |
| HFS | 1.28 | 1.41 | 3.03  | 1.00 | 5.20  | 4.50  | 4.40  | 2.38  | 5.00  | 2.60  |
| HRC | 0.33 | 0.32 | 0.58  | 0.19 | 1.00  | 0.75  | 0.60  | 0.33  | 1.00  | 0.43  |
| BPL | 0.35 | 0.33 | 0.50  | 0.22 | 1.33  | 1.00  | 0.78  | 0.40  | 0.67  | 0.33  |
| ICS | 0.31 | 0.32 | 0.47  | 0.23 | 1.67  | 1.28  | 1.00  | 1.00  | 0.78  | 0.50  |
| LR  | 0.75 | 1.00 | 1.00  | 0.42 | 3.03  | 2.50  | 1.00  | 1.00  | 1.67  | 1.00  |
| GPS | 0.30 | 0.22 | 0.88  | 0.20 | 1.00  | 1.49  | 1.28  | 0.60  | 1.00  | 0.67  |
| HSC | 0.57 | 0.44 | 1.41  | 0.38 | 2.33  | 3.03  | 2.00  | 1.00  | 1.49  | 1.00  |
| SUM | 6.34 | 6.54 | 13.12 | 4.47 | 23.44 | 22.43 | 19.55 | 10.04 | 20.58 | 11.24 |

#### 4.3.2. Step 2: Normalised pair-wise matrix

After putting the value of importance, the matrix was normalized by dividing each value by its' column total. After that, the components weights were calculated by averaging each of the rows as shown in the Table 4. 2. The last column shows the calculated weights of the HCR components. Simultaneously, Table 4. 3 presents the rounded weights to be used in further calculations of AHP. Table 4.3 also shows the number of indicators that have been investigated under each HCR component during the survey of the current research.

Table 4. 2 Normalised pair-wise matrix and components' weights

|     | KNW  | MGT  | PLD  | HFS  | HRC  | BPL  | ICS  | LR   | GPS  | HSC  | Weights |
|-----|------|------|------|------|------|------|------|------|------|------|---------|
| KNW | 0.16 | 0.15 | 0.17 | 0.17 | 0.13 | 0.13 | 0.16 | 0.13 | 0.16 | 0.16 | 15.3%   |
| MGT | 0.16 | 0.15 | 0.15 | 0.16 | 0.14 | 0.13 | 0.16 | 0.10 | 0.22 | 0.20 | 15.7%   |
| PLD | 0.07 | 0.08 | 0.08 | 0.07 | 0.07 | 0.09 | 0.11 | 0.10 | 0.06 | 0.06 | 7.9%    |
| HFS | 0.20 | 0.22 | 0.23 | 0.22 | 0.22 | 0.20 | 0.23 | 0.24 | 0.24 | 0.23 | 22.3%   |
| HRC | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 0.03 | 0.05 | 0.04 | 4.1%    |
| BPL | 0.05 | 0.05 | 0.04 | 0.05 | 0.06 | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 4.4%    |
| ICS | 0.05 | 0.05 | 0.04 | 0.05 | 0.07 | 0.06 | 0.05 | 0.10 | 0.04 | 0.04 | 5.5%    |
| LR  | 0.12 | 0.15 | 0.08 | 0.09 | 0.13 | 0.11 | 0.05 | 0.10 | 0.08 | 0.09 | 10.0%   |
| GPS | 0.05 | 0.03 | 0.07 | 0.04 | 0.04 | 0.07 | 0.07 | 0.06 | 0.05 | 0.06 | 5.4%    |
| HSC | 0.09 | 0.07 | 0.11 | 0.09 | 0.10 | 0.14 | 0.10 | 0.10 | 0.07 | 0.09 | 9.5%    |
| SUM | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 100%    |

Table 4. 3 Rounded weights of HCR components

| No. | HCR Components | Calculated Weights | Rounded weights | Number of indicators |
|-----|----------------|--------------------|-----------------|----------------------|
| 1.  | KNW            | 15.3%              | 15.0%           | 8                    |
| 2.  | MGT            | 15.7%              | 16.0%           | 8                    |
| 3.  | PLD            | 7.9%               | 8.0%            | 9                    |
| 4.  | HFS            | 22.3%              | 22.0%           | 11                   |
| 5.  | HRC            | 4.1%               | 4.0%            | 5                    |
| 6.  | BPL            | 4.4%               | 4.0%            | 5                    |
| 7.  | ICS            | 5.5%               | 6.0%            | 3                    |
| 8.  | LR             | 10.0%              | 10.0%           | 6                    |
| 9.  | GPS            | 5.4%               | 5.0%            | 6                    |
| 10. | HSC            | 9.5%               | 10.0%           | 6                    |
| SUM |                | 100%               | 100%            | 67                   |

The weightage of the components is crucial to ensure a fair and justified distribution of the total weightage (100%) among the ten components while calculating the overall HCR score. The following tree map, Figure 4. 3, illustrates the weightage of 10 HCR components. It was found that HFS obtained the maximum weightage of 22%

followed by MGT (16%), KNW (15%), LR (10%), HSC (10%), PLD (8%), ICS (6%), GPS (5%), and the least weightage of 4% for both HRC and BPL.

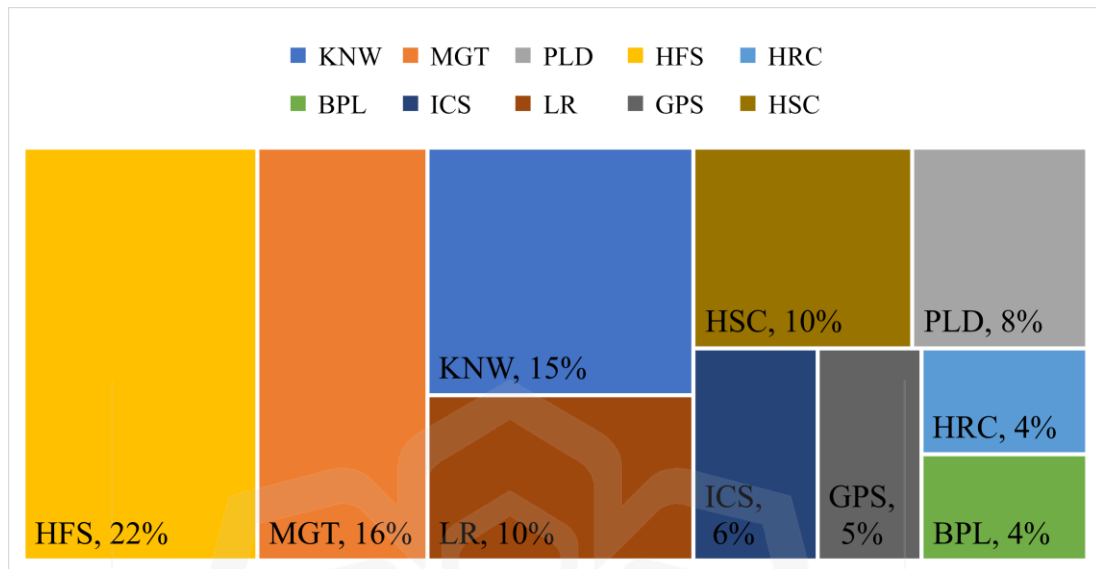


Figure 4. 3 Tree map showing calculated weights of 10 HCR components

#### 4.3.3. Step 3: Consistency ratio (CR)

The final step is required to ensure that the values in the pair-wise matrix (before normalizing in Table 4. 1) was consistent and the final weights in Table 4. 3 are free from inconsistency. For this purpose, firstly, the ratio was calculated by dividing the sum of respective components' rows by their respective weights found in Table 4. 3. The  $\lambda_{max}$  is the average of all the ratios as shown in the Table 4. 4.

Table 4. 4 Calculating  $\lambda_{\max}$ 

|                                          | KNW  | MGT  | PLD  | HFS  | HRC  | BPL  | ICS  | LR   | GPS  | HSC  | Sum  | Ratio =<br>Sum/ Weight |
|------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------------------------|
| KNW                                      | 0.15 | 0.16 | 0.18 | 0.17 | 0.12 | 0.13 | 0.18 | 0.13 | 0.18 | 0.17 | 1.56 | 10.24                  |
| MGT                                      | 0.15 | 0.16 | 0.16 | 0.16 | 0.13 | 0.13 | 0.17 | 0.10 | 0.24 | 0.21 | 1.61 | 10.28                  |
| PLD                                      | 0.07 | 0.08 | 0.08 | 0.07 | 0.07 | 0.09 | 0.12 | 0.10 | 0.06 | 0.07 | 0.80 | 10.20                  |
| HFS                                      | 0.20 | 0.22 | 0.24 | 0.22 | 0.22 | 0.20 | 0.24 | 0.24 | 0.27 | 0.25 | 2.28 | 10.23                  |
| HRC                                      | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.03 | 0.05 | 0.04 | 0.42 | 10.21                  |
| BPL                                      | 0.05 | 0.05 | 0.04 | 0.05 | 0.06 | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | 0.44 | 10.14                  |
| ICS                                      | 0.05 | 0.05 | 0.04 | 0.05 | 0.07 | 0.06 | 0.05 | 0.10 | 0.04 | 0.05 | 0.55 | 10.15                  |
| LR                                       | 0.11 | 0.16 | 0.08 | 0.09 | 0.13 | 0.11 | 0.05 | 0.10 | 0.09 | 0.09 | 1.02 | 10.14                  |
| GPS                                      | 0.05 | 0.03 | 0.07 | 0.04 | 0.04 | 0.06 | 0.07 | 0.06 | 0.05 | 0.06 | 0.55 | 10.23                  |
| HSC                                      | 0.09 | 0.07 | 0.11 | 0.08 | 0.10 | 0.13 | 0.11 | 0.10 | 0.08 | 0.09 | 0.96 | 10.18                  |
| $\lambda_{\max}$ = Average of the ration |      |      |      |      |      |      |      |      |      |      |      | <b>10.20</b>           |

**Source:** Research survey

The average ratio found in Table 4.5 was used to calculate the consistency index (CI) using the following formula where ‘n’ is the number of components.

$$\text{Consistency Index (CI)} = \frac{\lambda_{\max} - n}{n - 1} = (10.20 - 10) / (10 - 1) = 0.02222$$

Finally, the value of CI is used to measure the degree of consistency in pairwise comparison matrix (Pehlivan et al., 2017). The consistency ratio (CR) is the comparison of CI with the random index (RI) value which was also provided by the Saaty scale. CR was found by dividing the CI with random index (RI). For the present study, the RI value is 1.49 for 10 number of HCR components as shown in Table 4. 5.

Table 4. 5 Random Index (RI) table

| n  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|----|------|------|------|------|------|------|------|------|------|------|
| RI | 0.00 | 0.00 | 0.58 | 0.90 | 1.12 | 1.24 | 1.32 | 1.41 | 1.45 | 1.49 |

**Source:** Saaty and Vargas (1980)

$$\begin{aligned} \text{Hence, Consistency Ratio (CR)} &= \frac{CI}{\text{Random Index (RI)}} \\ &= 0.022/1.49 = \mathbf{0.015} \end{aligned}$$

The accepted value of CR is <0.1 and >0 (Saaty and Vargas, 1980). Therefore, the calculated CR (0.015) value shows a consistent weight of importance for the ten selected components of HCR. Thus, the measured weights of HCR components are safe to be used further calculation of AHP.

#### 4.3.4. Discussion on Measured Weights

The second objective of the research required to measure the weights of the selected HCR components, as well as to come up with a range of linguistic rating scale. In this regard, the research question was how to measure the weights or what method is suitable

for measuring the weights in rating system? In this regard, the literature review discovers the pairwise comparison method (PCM) of AHP to be the most suitable and justified approach of measuring the weights of HCR components. Such approach is supported by a number of earlier studies (Kannan, 2010; Piprani et al., 2020; Song and Kang, 2016; Zeferino et al., 2021) in ranking and rating systems. The judgement of prioritising HCR components was collected from 15 experts using Microsoft Excel tool adapted from Goepel (2013).

The measured weights revealed that HFS was given the maximum weights by the experts, followed by MGT and KNW in 2nd and 3rd, respectively. Such importance was in line with the requirements stated in MS1500:2019. Interestingly, HSC and LR received equal weight, securing the positions of 4th and 5th in the priority list, respectively. This indicate that experts consider the Halal supply chain (HSC) and Legal requirements (LR) as critical dimensions in determining the halal compliance level of a restaurant. Assigning equal importance to both the Halal supply chain (HSC) and Legal requirements (LR) could be because they are interlinked and equally crucial in determining the halal compliance level of a restaurant. While the Halal supply chain ensures the actual halal compliance of the product, legal requirements provide the necessary framework and certification process to ensure that the suppliers are in compliant with all the legal requirements.

The list of prioritising HCR components continued with premise location and design (PLD), image and customer satisfaction (ICS), and green practises and sustainability (GPS) in 6th, 7th, and 8th positions, respectively. On the other hand, human resources and culture (HRC) and branding, packaging, and labelling (BPL) both received the least attention and the same weight, placing them in positions 9 and 10, respectively, at the bottom of the priority list. The low importance given to human resources and culture (HRC) and branding, packaging, and labelling (BPL) could be due to their indirect impact on the actual halal compliance of the product or service. While they are still essential aspects of halal compliance, they may not have a direct impact on whether the product or service is halal or not. For example, having a strong human resources and culture policy may lead to better employee training and awareness, which may, in turn, improve halal compliance. Similarly, effective branding, packaging,

and labelling are necessary to communicate the halal compliance of the product or service to consumers, but they may not directly affect the halal compliance performance of a restaurant.

Malaysian Standard, MS1500: 2019, on the other hand, places little emphasis on halal supply chain placing it as sixth out of eight general requirements. Moreover, the standard does not include the components image and customer satisfaction, green practises and sustainability, and human resources and culture (HRC). In this regard, HRC's position at the bottom of the priority list by the expert is supported by MS1500:2019. However, the standard details out the requirements under BPL reflecting a significant importance of the component. Such importance was in contrast to the findings of the present study, where BPL was weighted the least by the experts with regard to the best practises of halal compliance rating (BPHCR) model for restaurants.

The present research also recommends a suitable range of rating scales and their linguistic expressions. The rating categories and their percentage ranges are: "Excellent (average score 4.5 and above)" is for > 90%; "Very Good (average score 3.5 to <4.5)" is for 70% to <90%; "Good (average score 2.5 to <3.5)" is for 50% to <70%; "Satisfactory (average score 1.5 to <2.5)" is for 30% to <50%; and "Poor (average score less than 1.5)" is for less than 30%. These rating intensities and categories are adopted from the most popular restaurant rating systems globally. However, the manual procedure for halal certification Malaysia (MPPHM) enlists only three categories of non-compliance offenses: major, minor, and serious. Simultaneously, MHMS 2020 has a scale for grading the satisfactory level of a business's readiness to get a halal certificate. The scale includes the expressions "very satisfying," "satisfactory," "unsatisfactory," and "absolutely not satisfactory."

#### **4.4. STAGE-3: RATINGS AND THEIR RESPECTIVE WEIGHTS**

To make sense of the calculated HCR scores, the literature review (chapter 2) also identifies the most suitable linguistic expression of the HCR scores as presented in Table 4. 6. The best performance of practicing halal compliance has been rated as



‘Excellent’ with an HCR score of 4.5 to 5.0. A rating of ‘Very good’ has an HCR score of 3.5 to less than 4.5. Likewise, an HCR score of 2.5 to less than 3.5 is rated as good compliance, and satisfactory compliance is rated for an HCR score of 1.5 to less than 2.5. Finally, halal compliance performance rating is rated as ‘Poor’ for an HCR score of less than 1.5.

Same ratings have been used to divide each HCR components in the survey to score the halal compliance performance by the restaurants, where the maximum score was 5.0 based on five-point Likert scale. The average score of all the indicators was rated according to the categories presented in Table 4. 6. For example, if the average of all 8 items was  $\geq 4.5$  under the component KNW, the respective respondent was rated to have “excellent” knowledge on halal and *toyyib*. The rating codes, that have been used in the AHP pairwise comparison matrix (PCM), are also presented in Table 4. 6. Additionally, the table shows the percentiles of each rating which has been based on the maximum achievable rating score 5.0 (100%) in the survey for each component.

Table 4. 6 Linguistic ratings of HCR score

| Linguistic rating of HCR | AHP Code | Numerical rating of HCR | Percentage      |
|--------------------------|----------|-------------------------|-----------------|
| Excellent                | Ex       | $\geq 4.5$              | $\geq 90\%$     |
| Very good                | VG       | 3.5 to $< 4.5$          | 70% to $< 90\%$ |
| Good                     | G        | 2.5 to $< 3.5$          | 50% to $< 70\%$ |
| Satisfactory             | Sf       | 1.5 to $< 2.5$          | 30% to $< 50\%$ |
| Poor                     | P        | $< 1.5$                 | Less than 30%   |

The relative values of the ratings were determined by asking the experts the following question:

Q1. How much better is "Excellent" compared to "Very Good" when it comes to HCR component KNW?

Using Saaty's preference scale as a guide, the subject matter experts each supplied a value on a scale ranging from 1 to 9 in the provided Excel tool of AHP. When comparing the results of 10 different pairs of ratings, the same kind of inquiry was asked.

| AHP Analytic Hierarchy Process                                                                                                                                                                           |              |              |  |  |  |  |  |  |  |  |         |              |  |  | n=               | 5        | Input | 4          |                   |     |       |        |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--|--|--|--|--|--|--|--|---------|--------------|--|--|------------------|----------|-------|------------|-------------------|-----|-------|--------|-------|
| Objective: Measuring weights of different ratings of HCR components                                                                                                                                      |              |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| Only input data in the light green fields!                                                                                                                                                               |              |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| Please compare the importance of the elements in relation to the objective and fill in the table: Which element of each pair is more important, A or B, and how much more on a scale 1-9 as given below. |              |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| Once completed, you might adjust highlighted comparisons 1 to 3 to improve consistency.                                                                                                                  |              |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| n                                                                                                                                                                                                        | Criteria     |              |  |  |  |  |  |  |  |  | Comment |              |  |  |                  |          |       |            |                   |     | RGMM  | +/-    |       |
| 1                                                                                                                                                                                                        | Excellent    |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     | 47.2% | 9.0%   |       |
| 2                                                                                                                                                                                                        | Very good    |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     | 26.7% | 2.6%   |       |
| 3                                                                                                                                                                                                        | Good         |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     | 14.2% | 2.0%   |       |
| 4                                                                                                                                                                                                        | Satisfactory |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     | 7.5%  | 0.7%   |       |
| 5                                                                                                                                                                                                        | Poor         |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     | 4.4%  | 0.8%   |       |
| for 9&10 unprotect the input sheets and expand the question section ("+" in row 66)                                                                                                                      |              |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| Participant 4                                                                                                                                                                                            |              |              |  |  |  |  |  |  |  |  |         |              |  |  | 1                | 25-09-20 |       | $\alpha$ : | 0.1               | CR: | 1%    |        |       |
| Name                                                                                                                                                                                                     |              |              |  |  |  |  |  |  |  |  |         |              |  |  | Weight           |          | Date  |            | Consistency Ratio |     |       |        |       |
| Criteria                                                                                                                                                                                                 |              |              |  |  |  |  |  |  |  |  |         |              |  |  | more important ? |          | Scale |            |                   |     |       |        |       |
| i                                                                                                                                                                                                        | j            | A            |  |  |  |  |  |  |  |  |         | B            |  |  |                  |          |       |            |                   |     |       | A or B | (1-9) |
| 1                                                                                                                                                                                                        | 2            | Excellent    |  |  |  |  |  |  |  |  |         | Very good    |  |  |                  |          |       |            |                   |     |       | A      | 2     |
| 1                                                                                                                                                                                                        | 3            |              |  |  |  |  |  |  |  |  |         | Good         |  |  |                  |          |       |            |                   |     |       | A      | 4     |
| 1                                                                                                                                                                                                        | 4            |              |  |  |  |  |  |  |  |  |         | Satisfactory |  |  |                  |          |       |            |                   |     |       | A      | 6     |
| 1                                                                                                                                                                                                        | 5            |              |  |  |  |  |  |  |  |  |         | Poor         |  |  |                  |          |       |            |                   |     |       | A      | 8     |
| 1                                                                                                                                                                                                        | 6            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| 1                                                                                                                                                                                                        | 7            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| 1                                                                                                                                                                                                        | 8            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| 2                                                                                                                                                                                                        | 3            | Very good    |  |  |  |  |  |  |  |  |         | Good         |  |  |                  |          |       |            |                   |     |       | A      | 2     |
| 2                                                                                                                                                                                                        | 4            |              |  |  |  |  |  |  |  |  |         | Satisfactory |  |  |                  |          |       |            |                   |     |       | A      | 4     |
| 2                                                                                                                                                                                                        | 5            |              |  |  |  |  |  |  |  |  |         | Poor         |  |  |                  |          |       |            |                   |     |       | A      | 6     |
| 2                                                                                                                                                                                                        | 6            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| 2                                                                                                                                                                                                        | 7            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| 2                                                                                                                                                                                                        | 8            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| 3                                                                                                                                                                                                        | 4            | Good         |  |  |  |  |  |  |  |  |         | Satisfactory |  |  |                  |          |       |            |                   |     |       | A      | 2     |
| 3                                                                                                                                                                                                        | 5            |              |  |  |  |  |  |  |  |  |         | Poor         |  |  |                  |          |       |            |                   |     |       | A      | 4     |
| 3                                                                                                                                                                                                        | 6            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| 3                                                                                                                                                                                                        | 7            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| 3                                                                                                                                                                                                        | 8            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |
| 4                                                                                                                                                                                                        | 5            | Satisfactory |  |  |  |  |  |  |  |  |         | Poor         |  |  |                  |          |       |            |                   |     |       | A      | 2     |
| 4                                                                                                                                                                                                        | 6            |              |  |  |  |  |  |  |  |  |         |              |  |  |                  |          |       |            |                   |     |       |        |       |

Figure 4. 4 Snapshot of PCM by the experts

#### 4.4.1. Local weights of ratings

The PCM for the ratings, which are excellent (Ex), very good (VG), good (G), satisfactory (Sf), and poor (P), as well as their respective local weights are calculated from the AHP matrix. Similar steps have been carried out, as measuring weights of HCR components, to measure the local weights of five different ratings. The results of local weights of ratings are presented in Table 4. 7. The consistency ratio was found to

be 0.005 indicating a consistent weight of importance. These weights are carried forward to calculate the global weights of ratings under the 10 HCR components.

Table 4. 7 PCM and local weights of ratings

|    | Ex                             | VG   | G    | Sf   | P    | Weights |
|----|--------------------------------|------|------|------|------|---------|
| Ex | 0.41                           | 0.43 | 0.42 | 0.38 | 0.35 | 0.40    |
| VG | 0.23                           | 0.25 | 0.27 | 0.26 | 0.26 | 0.25    |
| G  | 0.16                           | 0.15 | 0.16 | 0.19 | 0.18 | 0.17    |
| Sf | 0.11                           | 0.10 | 0.09 | 0.11 | 0.13 | 0.11    |
| P  | 0.09                           | 0.08 | 0.07 | 0.06 | 0.08 | 0.07    |
|    | Consistency Ratio (CR) = 0.005 |      |      |      |      |         |

#### 4.4.2. Global weights of ratings

The next step is to find out the global weights of the ratings under each of the ten HCR components. To do so, the weights of the HCR components (from Table 4. 3) were multiplied with the local weights of the ratings (from Table 4. 7). The findings are presented in Table 4. 8. The output shows that, the global weights of different ratings for the first HCR component (KNW) were- ‘Excellent’-KNW= 0.60, ‘Very good’-KNW= 0.038, ‘Good’-KNW= 0.026, ‘Satisfactory’-KNW= 0.017, and ‘Poor’-KNW= 0.011. Likewise, the table shows a total of 50 global weights for the 5 different ratings under 10 HCR components. These weights are used to calculate the overall HCR score of respective halal-certified restaurants.

Table 4. 8 Global weights of ratings

| HCR components | Component weights | Ratings      | Global weights of the ratings (GW) |
|----------------|-------------------|--------------|------------------------------------|
| KNW            | 0.15              | Excellent    | 0.060                              |
|                |                   | Very good    | 0.038                              |
|                |                   | Good         | 0.026                              |
|                |                   | Satisfactory | 0.017                              |
|                |                   | Poor         | 0.011                              |
| MGT            | 0.16              | Excellent    | 0.064                              |
|                |                   | Very good    | 0.040                              |
|                |                   | Good         | 0.027                              |
|                |                   | Satisfactory | 0.018                              |
|                |                   | Poor         | 0.011                              |
| PLD            | 0.08              | Excellent    | 0.032                              |
|                |                   | Very good    | 0.020                              |
|                |                   | Good         | 0.014                              |
|                |                   | Satisfactory | 0.009                              |
|                |                   | Poor         | 0.006                              |
| HFS            | 0.22              | Excellent    | 0.088                              |
|                |                   | Very good    | 0.055                              |
|                |                   | Good         | 0.037                              |
|                |                   | Satisfactory | 0.024                              |
|                |                   | Poor         | 0.015                              |
| HRC            | 0.04              | Excellent    | 0.016                              |
|                |                   | Very good    | 0.010                              |
|                |                   | Good         | 0.007                              |
|                |                   | Satisfactory | 0.004                              |
|                |                   | Poor         | 0.003                              |
| BPL            | 0.04              | Excellent    | 0.016                              |
|                |                   | Very good    | 0.010                              |
|                |                   | Good         | 0.007                              |

|     |      |              |       |
|-----|------|--------------|-------|
|     |      | Satisfactory | 0.004 |
|     |      | Poor         | 0.003 |
| ICS | 0.06 | Excellent    | 0.024 |
|     |      | Very good    | 0.015 |
|     |      | Good         | 0.010 |
|     |      | Satisfactory | 0.007 |
|     |      | Poor         | 0.004 |
| LR  | 0.10 | Excellent    | 0.040 |
|     |      | Very good    | 0.025 |
|     |      | Good         | 0.017 |
|     |      | Satisfactory | 0.011 |
|     |      | Poor         | 0.007 |
| GPS | 0.05 | Excellent    | 0.020 |
|     |      | Very good    | 0.013 |
|     |      | Good         | 0.009 |
|     |      | Satisfactory | 0.006 |
|     |      | Poor         | 0.004 |
| HSC | 0.10 | Excellent    | 0.040 |
|     |      | Very good    | 0.025 |
|     |      | Good         | 0.017 |
|     |      | Satisfactory | 0.011 |
|     |      | Poor         | 0.007 |

#### 4.5. OVERALL HCR SCORE AND RANKING

The global weights from Table 4. 8 are used to calculate the overall HCR score of respective halal-certified restaurants. In this regard, firstly, we identified the evaluated ratings of each HCR component from the survey. An example of calculating overall HCR score of a restaurant has been shown in Table 4. 9. The restaurant in this example, as shown in the table, received ‘Excellent’ evaluated rating in all HCR components

except for ICS as ‘Good’, and GPS as ‘Very good’ based on the average score of all items under each component. Such evaluation of rating is based on the categories and ranges mentioned in Table 4. 6 (Linguistic ratings of HCR scores).

Table 4. 9 Numerical equivalents of overall HCR score for halal certified restaurants  
(Example: Restaurant-X)

| HCR Components | Survey Rating Score | Evaluated Rating | Global weight of evaluated ratings | Overall HCR score<br>( $\Sigma$ Global Weight) |
|----------------|---------------------|------------------|------------------------------------|------------------------------------------------|
| KNW            | 5.00                | Excellent        | 0.060                              | 0.379                                          |
| MGT            | 5.00                | Excellent        | 0.064                              |                                                |
| PLD            | 5.00                | Excellent        | 0.032                              |                                                |
| HFS            | 4.64                | Excellent        | 0.088                              |                                                |
| HRC            | 5.00                | Excellent        | 0.016                              |                                                |
| BPL            | 5.00                | Excellent        | 0.016                              |                                                |
| ICS            | 3.00                | Good             | 0.010                              |                                                |
| LR             | 4.67                | Excellent        | 0.040                              |                                                |
| GPS            | 3.67                | Very good        | 0.013                              |                                                |
| HSC            | 5.00                | Excellent        | 0.040                              |                                                |

After that the global weights of respective ratings are picked up from the Table 4. 8 for all ten HCR components as shown in the second last column of Table 4. 9. Finally, the overall HCR score, 0.379 in last column, is found by adding all the global weights. The overall HCR score is the summation of all global weights achieved by a restaurant under ten HCR components.

#### 4.5.1. Ranking and Linguistic ratings of overall HCR scores

The overall HCR scores of all 320 restaurants were calculated using Microsoft Excel by keying in the GWs of ratings, and component weights. Table 4. 10 presents the findings of overall HCR scores of 320 restaurants that have been surveyed in this research. Result shows that the maximum HCR score of the restaurants was 0.400 and the minimum score was 0.168.

Table 4. 10 Ranking and linguistic ratings of overall HCR scores achieved by halal-certified restaurants in Malaysia

| Rank | Alternatives<br>(Halal-certified<br>restaurants) | Overall HCR<br>score | HCR<br>Percentage | Linguistic<br>Rating |
|------|--------------------------------------------------|----------------------|-------------------|----------------------|
| 1.   | Restaurant No. 3                                 | 0.400                | 100%              | Excellent            |
| 2.   | Restaurant No. 4                                 | 0.400                | 100%              | Excellent            |
| 3.   | Restaurant No. 15                                | 0.400                | 100%              | Excellent            |
| –    | –                                                | –                    | –                 | –                    |
| –    | –                                                | –                    | –                 | –                    |
| 20.  | Restaurant No. 118                               | 0.358                | 89.5%             | Very Good            |
| 21.  | Restaurant No. 162                               | 0.358                | 89.5%             | Very Good            |
| 22.  | Restaurant No. 77                                | 0.357                | 89.25%            | Very Good            |
| –    | –                                                | –                    | –                 | –                    |
| –    | –                                                | –                    | –                 | –                    |
| 70.  | Restaurant No. 137                               | 0.273                | 68.25%            | Good                 |
| 71.  | Restaurant No. 91                                | 0.272                | 68.00%            | Good                 |
| 72.  | Restaurant No. 64                                | 0.270                | 67.5%             | Good                 |
| –    | –                                                | –                    | –                 | –                    |
| –    | –                                                | –                    | –                 | –                    |
| 306. | Restaurant No. 271                               | 0.198                | 49.5%             | Satisfactory         |

|      |                    |       |        |              |
|------|--------------------|-------|--------|--------------|
| 307. | Restaurant No. 101 | 0.195 | 48.75% | Satisfactory |
|      |                    |       |        |              |
|      |                    |       |        |              |
| 320. | Restaurant No. 109 | 0.168 | 42%    | Satisfactory |

To express the overall HCR scores linguistically, the best HCR score (0.4000) was taken as the standardised score for all restaurants. This was done to find the HCR percentile of respective restaurants using the following formula-

$$\text{HCR Percentile} = \frac{\text{Overall HCR score of Restaurant}_i}{\text{Standardised overall HCR score (0.400)}} \times 100$$

$$= \frac{0.379}{0.400} \times 100 = 94.75\% \text{ [Representing the restaurant in Table 4.10]}$$

If we take the example restaurant used in Table 4. 9, we find the percentage of HCR as 94.75 that falls into the “Excellent” category of ratings following the criteria of Table 4. 6. The different rating categories and their percentage ranges are- “Excellent” is for  $\geq 90\%$ ; “Very good” is for 70% to  $<90\%$ ; “Good” is for 50% to  $<70\%$ ; “Satisfactory” is for 30% to  $<50\%$ ; and “Poor” is for less than 30%. Similarly, using the same method, the overall HCR scores of all 320 restaurants were converted into percentage and assigned a linguistic rating accordingly. Table 4. 10 presented earlier, shows the HCR percentages and their respective linguistic ratings for the halal certified restaurants in Malaysia. The descriptive findings of ranking and overall HCR scores are presented in next chapter.

#### 4.5.2 Discussion on Ranking and Rating Halal-Certified Restaurants

The third objective of the research was achieved by applying the absolute measurement of AHP which resulted the development of HCR tool for restaurants. In this regard, a survey was carried out among 320 halal-certified restaurants to measure their average score of halal compliance performance against the ten HCR components. Kuala



Lumpur, Selangor, and Johor are home to the bulk of Malaysia's halal-certified food premises. The majority of survey participants were females and Muslims. Such findings indicate the women empowerment in Malaysia and their participation in restaurant business playing the role of MSMEs and contributing to the economy. Simultaneously, a majority of those who answered the survey had at least a high school diploma or a first degree. This supports the average literacy level of the MSMEs in Malaysia found by previous studies (M. A. Abdullah et al., 2020; Abu Bakar et al., 2019; Bank Negara Malaysia, 2016).

The best halal compliance practices among the halal-certified restaurants in Malaysia have been investigated under the ten identified HCR components, which included 67 auditable items. Each item was scored on a five-point Likert scale, where 5 is the maximum and 1 is the minimum. The average score of all halal performance practises was 4.0, but the performance of "image and customer satisfaction" (ICS) was below average. A number of factors might have caused such low ICS performance. Firstly, about 30 percent of the respondents did not have a customer review, which gave them a zero score under that particular item. Additionally, another 20 percent of the respondents had a poor or very poor customer satisfaction review (Table 5.8). Other factors may include lack of awareness among consumers regarding halal compliance, inadequate customer service, negative perceptions towards halal, and quality issues. The impact of these factors should be investigated in future studies. However, such poor performance suggests that Malaysia's halal-certified restaurants need to address the ICS component as a matter of concern.

The ranking and rating analysis revealed that only 19 restaurants (5.94%) were found to achieve an "Excellent" rating for halal compliance practices. This is a surprisingly low figure that highlights how much progress must still be made in order to ensure halal compliance practices are adopted across all food establishments. The mean HCR score was 0.258, with 65% indicating a "good" rating for HCR. However, this still indicates that there is considerable room for improvement, as a "good" rating does not represent the highest possible standards of halal compliance, according to the present research. The positive result is that no restaurant was found to have a "poor" rating. This is indicative of the progress that has been made over the years and a

testament to the dedication of restaurants to adhere to higher standards of halal compliance.

Finally, the steps of ranking and rating, presented in this chapter, are the details of applying the AHP methodology. However, the entire job of ranking and rating can become easier with the use of decision-making software like Super Decision. Super Decision automates the process of aggregating the data and computing the pairwise comparison matrices, and thus speeds up the entire process of ranking and rating. The hierarchy can be constructed in the software. The present research used Microsoft Excel to show the detail calculation involved in each step of ranking mode of AHP. The weights of HCR components and rating intensities from the present research can be used as predetermined values. However, the auditing organisation can determine improved and more reliable weights by involving more experts from different organisations. This will enable the auditing organisation to obtain more accurate results and make well-informed decisions while optimising resources, time, and cost. The overall HCR score of a restaurant can be calculated instantly by inserting the rating intensities under each HCR component found during an audit. The combined HCR score should serve as an effective reference for the auditing organisation to identify improvements and deficiencies that need to be addressed.

## **CHAPTER SUMMARY**

This chapter achieves the objective of developing and applying the Halal Compliance Rating (HCR) tool for halal-certified restaurants and/or food premises in Malaysia. The absolute measurement of AHP was adopted to rank and rate 320 respondents. The first stage in this process is to construct the hierarchy, which begins with the selection of HCR components. Twenty experts justified the selection of the components by sharing their opinions. The hierarchy construct is comprised of the goal- ranking HCR scores of halal-certified restaurants in Malaysia, the criteria- ten HCR components, and the alternatives- 320 surveyed restaurants.

In the second stage of the process, the identified ten HCR components were weighted using the Analytic Hierarchy Process (AHP). Out of twenty experts, fifteen (15) responded and sent back their feedback on pairwise comparisons. It was found that HFS obtained the maximum weight of 22%, followed by MGT (16%), KNW (15%), LR (10%), HSC (10%), PLD (8%), ICS (6%), GPS (5%), and the least weight of 4% for both HRC and BPL. The calculated CR (0.015) value showed a consistent weight of importance for the ten selected components of HCR.

The third stage started with developing the rating scale for each component. The best performance in practising halal compliance has been rated as "Excellent," with an HCR score of 4.5 to 5.0 (> 90% halal compliant). A rating of "very good" has an HCR score of 3.5 to less than 4.5 (70% to <90% halal compliant). Likewise, an HCR score of 2.5 to less than 3.5 is rated as "Good" compliance (50% to <70%), and "Satisfactory" compliance is rated for an HCR score of 1.5 to less than 2.5 (30% to <50% halal compliant). Finally, the halal compliance performance rating is rated as "Poor" for an HCR score of less than 1.5 (less than 30% halal compliant).

The next step in stage 3 was to measure the local weights of each rating by applying AHP and following the same steps applied in measuring the weights of HCR components. After that, the global weights of each rating were found by multiplying their respective component weights. The overall HCR score of each halal-certified restaurant was calculated using these global weights. The overall HCR score is the sum of all global weights achieved by a restaurant under the ten HCR components. The same method can be applied any sample size of respondents to rank and rate their halal compliance performance.

## **CHAPTER 5**

### **FINDINGS AND DISCUSSION**

#### **5.1. CHAPTER INTRODUCTION**

This chapter provides descriptive findings of the research. The findings represent data collected from a sample size of 320 halal certified restaurants across Malaysia. The chapter starts with the presentation of respondent's background statistics and a brief discussion about their business profile. It follows with a discussion on the selected ten HCR components. Simultaneously, the findings of descriptive statistics of ten HCR components and business performance of the respondents are presented. Additionally, findings on the ranking of the restaurants have been presented and the findings of calculated HCR scores were categorised based on the linguistic expression and presented at the end of the chapter. Finally, the chapter achieves the last objective of the research which is to validate the best practice of HCR (BPHCR) model. It presents the detailed analysis and results of the data collected and used in this research.

#### **5.2 BACKGROUND OF RESPONDENTS**

The background of respondents is composed of their business location, gender, level of education, religion, annual sales turnover, and employee size. The questionnaire was designed to investigate and limited to only a few aspects of respondents' background as the main focus was to investigate the halal compliance practice of the restaurant managements under the ten HCR components. The following results show the participation of the respondents from different states of Malaysia, and their diversified background in terms of education, religion, and business profile.

### 5.2.1. State

The survey was conducted across Malaysia adopting both online and offline methods of data collection. While the online questionnaire was distributed as Google form in all possible platform (i.e., email, Facebook, WhatsApp, and Telegram), the offline survey was carried out in three states namely, Kuala Lumpur, Selangor, and Johor. These three states represent more than 54% of the total halal certified restaurants in Malaysia. Data illustrated in Figure 5. 1. shows that 40 percent of the respondents were from locations other than these three states. Among these three states, Selangor had the maximum 91 respondents which is 28 percent of total 320 respondents. The remaining halal certified restaurants that participated in the survey were comprised of 18 percent (57) from Kuala Lumpur, and 14 percent (44) from Johor.

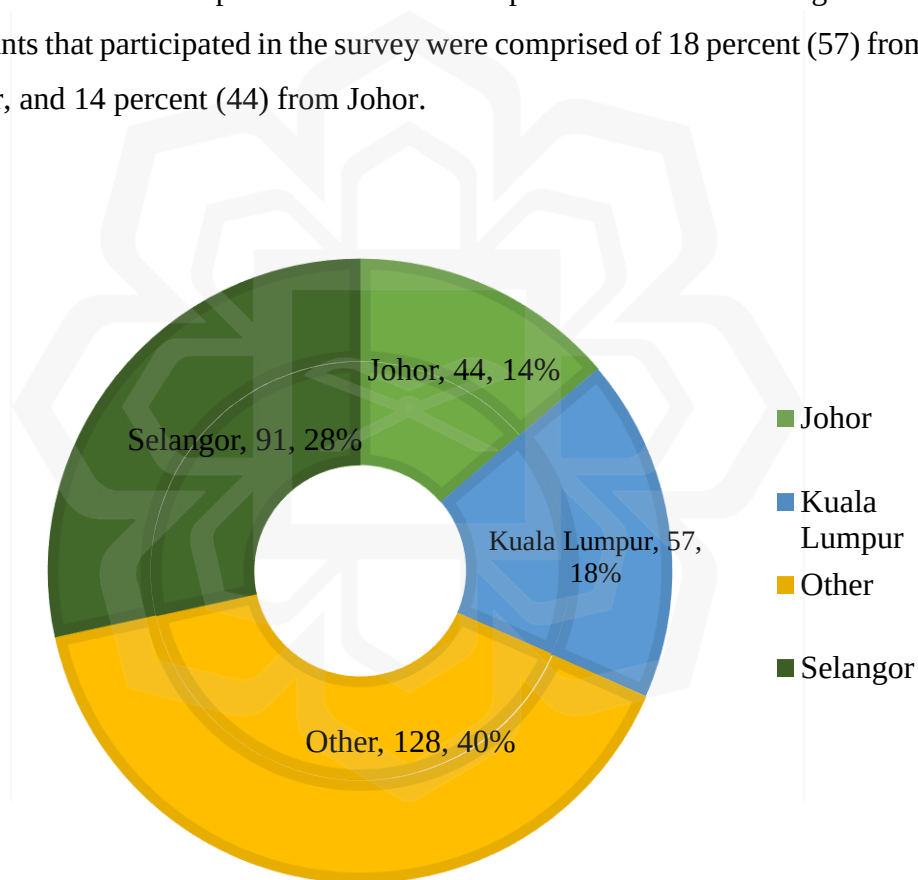


Figure 5. 1 Business locations of respondents

### 5.2.2. Gender and Religion

The survey results revealed that 57.8 percent (185) of the restaurant owners and/or managers were female, and the rest, 42.2 percent (135), were male (Figure 5. 2). Simultaneously, the majority of the respondents were Muslims, representing 78.80 percent of the total 320 respondents. The non-Muslim respondents were found to be 21.30 percent of all halal-certified restaurants' owners and/or managers.

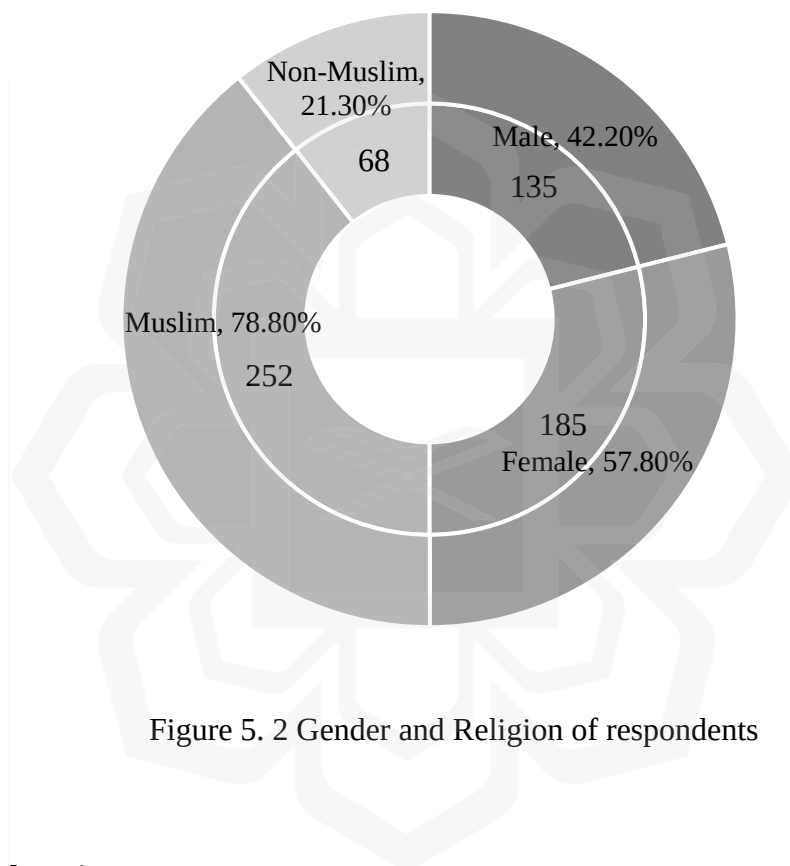


Figure 5. 2 Gender and Religion of respondents

### 5.2.3. Education

The level of education is important for business owners/manager in order to acquire knowledge of halal and *toyyib*, and to maintain compliance accordingly. Data findings presented in Figure 5. 3 revealed that 15.3 percent of the respondents had non-formal education and only 2.2 percent of them had primary level of education. Approximately, 12.2 percent of them completed the secondary school level of education. Simultaneously, 27.2 and 28.7 percent of the respondents had a diploma and a first degree, or equivalent level of education, respectively. Additionally, 46 respondents

representing 14.4 percent of the total 320 restaurant owners and/or managers had a postgraduate degree.

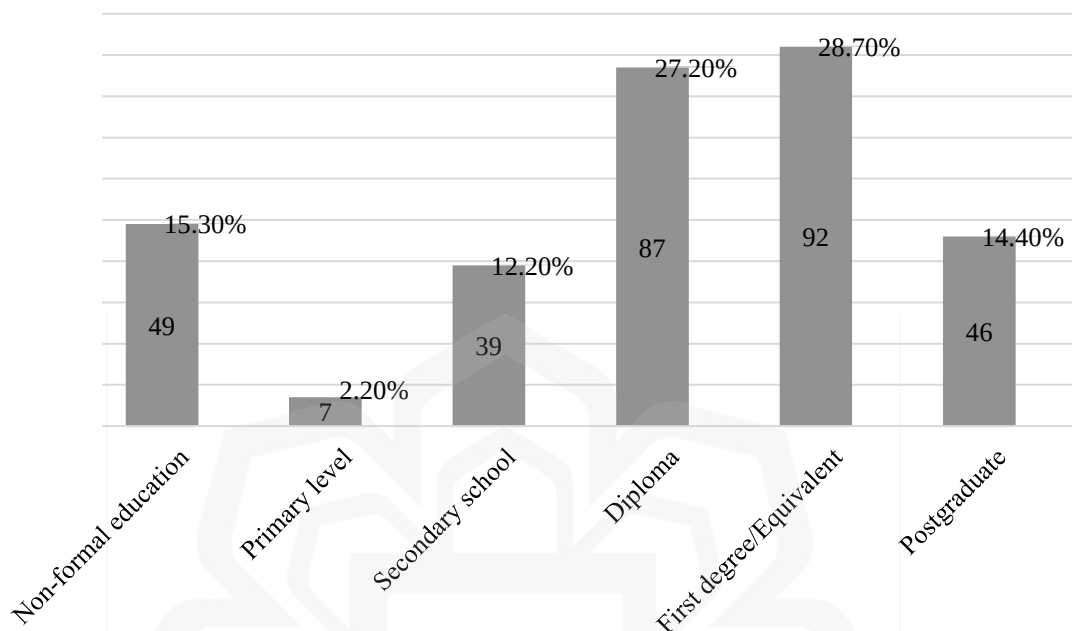


Figure 5. 3 Education level of respondents

#### 5.2.4. Business profile (Annual sales and employee size)

The business profiles of the respondents were observed in terms of their annual sales-turnover and number of employees. This is in line with the criteria for defining MSMEs in Malaysia. According to the definition of MSMEs given by SME Corp Malaysia, in terms of annual sales-turnover, 32 percent of the respondents were micro, 43 percent were small, and 23 percent were medium sized enterprises operating halal certified restaurants in Malaysia (Figure 5. 4). However, in terms of employee size the percentages are somewhat different. As per the number of employees, most of the halal certified restaurants were small sized enterprises representing 52 percent of all respondents. On the other hand, micro- and medium-sized restaurants had 16 percent and 32 percent, respectively, of the total number of employees.

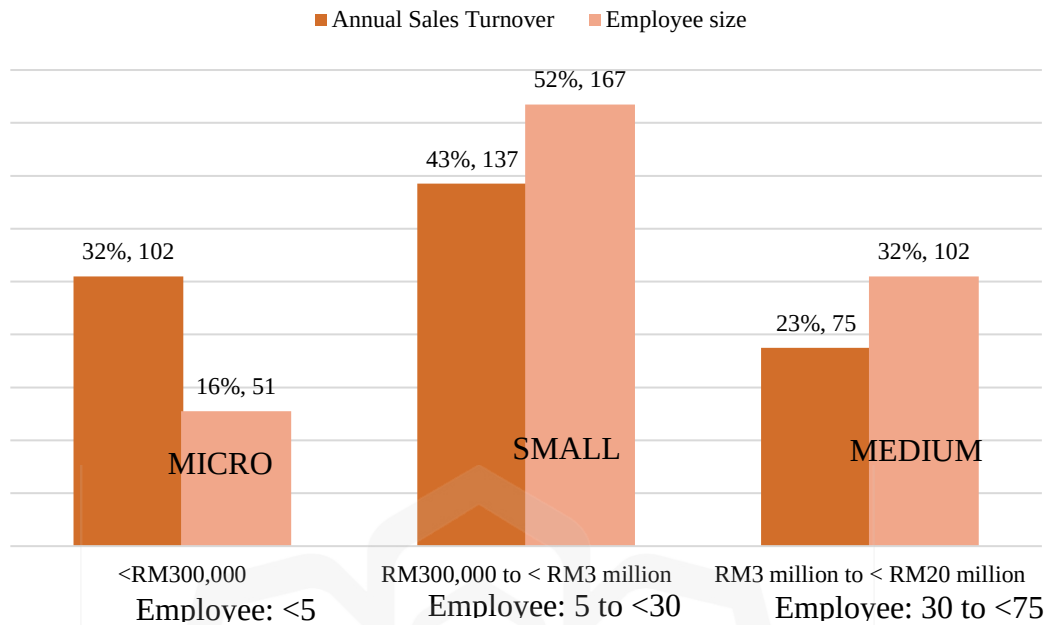


Figure 5. 4 Business profile of respondents

#### 5.2.5. Summary and discussion on background findings

The surveyed sample respondents reflect a distribution of halal certified restaurants across Malaysia similar to their percentage of actual population in different states as presented in Chapter-3 (section 3.4.3.3.1). Majority of the respondents were female indicating women's empowerment in Malaysia and their participation in halal restaurant businesses. Non-Muslim owners and/or managers' participation in halal restaurant businesses was also observed, although it was only about 21.3 percent. About 56 percent of the respondents had a diploma (27.2%) or first degree (28.70%) level of education. Respondents were also found to have higher degree (postgraduate) education representing 14.6 percent of sample size. The majority of the respondents were small sized enterprises both in terms of annual sales-turnover and employee size. The percentage of both micro and medium-sized restaurant operators were 32% for each. However, in terms of number of employees, medium-sized restaurants (23%) were more than micro-sized restaurants (16%). Table 5. 1 provides a summary of the statistical findings on the backgrounds of the respondents as discussed earlier in this section.



Table 5. 1 Background statistics of respondents

| Background of respondents<br>(Total sample size = 320) | Frequency | Percentage (%) |
|--------------------------------------------------------|-----------|----------------|
| <b>1. State</b>                                        |           |                |
| Johor                                                  | 44        | 13.8           |
| Kuala Lumpur                                           | 57        | 17.8           |
| Other                                                  | 128       | 40.0           |
| Selangor                                               | 91        | 28.4           |
| <b>2. Gender</b>                                       |           |                |
| Male                                                   | 135       | 42.2           |
| Female                                                 | 185       | 57.8           |
| <b>3. Religion</b>                                     |           |                |
| Muslim                                                 | 252       | 78.8           |
| Non-Muslim                                             | 68        | 21.3           |
| <b>4. Education</b>                                    |           |                |
| Non-Formal education                                   | 49        | 15.3           |
| Primary level                                          | 7         | 2.2            |
| Secondary School                                       | 39        | 12.2           |
| Diploma                                                | 87        | 27.2           |
| First degree/Equivalent                                | 92        | 28.7           |
| Postgraduate                                           | 46        | 14.4           |
| <b>5. Annual Sales-Turnover</b>                        |           |                |
| Less than Rm300,000                                    | 102       | 31.9           |
| RM300,000 to RM3 million                               | 137       | 42.8           |
| RM3 million to RM20 million                            | 75        | 23.4           |
| <b>6. Employee Size</b>                                |           |                |
| Less than 5 employees                                  | 51        | 15.9           |
| 5 to 30 employees                                      | 167       | 52.2           |
| 30 to 75 employees                                     | 102       | 31.9           |

### 5.3 HALAL COMPLIANCE PRACTICES UNDER 10 HCR COMPONENTS

The research achieves its first objective of identifying the crucial components of HCR. The second section (Section-B) of the research questionnaire (please see Appendix-I) investigated the halal compliance practices by the restaurant operators under 10 (ten) identified HCR components as mentioned in Chapter-2 and Chapter-3. The responses were collected through a self-administered questionnaire based on five-point Likert scale. Followings are the descriptive findings and discussion under these 10 HCR components.

#### 5.3.1. Knowledge on Halal and *Toyyib* (KNW)

This component reflects the knowledge of operating personnel on critical ingredients, halal and *toyyib*, cleanliness and processing, and other matters related to halal compliance. Understanding and adhering to the principles of halal and *toyyib* are essential in order to sustain the halal compliance and certification requirements. This component was discovered to be emphasised by the study academics (Zannierah et al., 2012; Rahman et al., 2012; Sorooshian and Dahan, 2013) despite not being mentioned by any of the reviewed standards and rating systems.

The respondents were requested to provide their responses based on a five-point Likert scale ('Excellent-5', 'Good-4', 'Average-3', 'Satisfactory-2', and 'Poor-1') under 8 (eight) statements regarding their knowledge on halal and *toyyib*. This HCR component is to measure the level of knowledge of restaurant operators, which is essential to practicing halal compliance. Data collected from a total of 320 respondents under this component is presented in Table 5. 2. From the table it can be observed that more than 40 percent of the respondents had an excellent knowledge of the meaning of both halal and *toyyib* as defined in MS 1500:2019. Likewise, more than 55 percent of them had excellent level of knowledge on *toyyiban* aspect to ensure the quality of any product and services. Simultaneously, more than 60 percent of the respondents had good knowledge of halal and *toyyib* to retain the halal integrity and consumer trust, *toyyiban*

knowledge related to the sustainability of the products and services, and knowledge to maintain good gesture and presentation. Additionally, a good level of knowledge to identify the critical ingredients in food preparation was observed among 50.6 percent of the respondents. Similar level of knowledge to identify the critical points in the supply chain (farm to fork) was expressed by 57.8 percent of respondents. However, around 25 percent of the respondents had an average level of knowledge regarding the critical aspects of halal compliance.

Table 5. 2 Responses under HCR Component-1: Knowledge on halal and *toyyib* (KNW)

| Response                                                                                   | Frequency | Percentage | Mean | Std. Deviation |
|--------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| [1]. Knowledge on the meaning of halal defined in MS1500:2019                              |           |            |      |                |
| Satisfactory                                                                               | 7         | 2.2        | 4.11 | 0.874          |
| Average                                                                                    | 85        | 26.6       |      |                |
| Good                                                                                       | 93        | 29.1       |      |                |
| Excellent                                                                                  | 135       | 42.2       |      |                |
| [2]. Knowledge on the meaning of <i>toyyib</i> defined in MS1500:2019                      |           |            |      |                |
| Satisfactory                                                                               | 9         | 2.8        | 4.07 | 0.886          |
| Average                                                                                    | 88        | 27.5       |      |                |
| Good                                                                                       | 95        | 29.7       |      |                |
| Excellent                                                                                  | 128       | 40.0       |      |                |
| [3]. The <i>toyyiban</i> aspect to ensure the quality of any product and services          |           |            |      |                |
| Average                                                                                    | 54        | 16.9       | 4.38 | 0.759          |
| Good                                                                                       | 89        | 27.8       |      |                |
| Excellent                                                                                  | 177       | 55.3       |      |                |
| [4]. Knowledge of halal and <i>toyyib</i> to retain the halal integrity and consumer trust |           |            |      |                |
| Satisfactory                                                                               | 4         | 1.3        | 3.95 | 0.641          |
| Average                                                                                    | 62        | 19.4       |      |                |
| Good                                                                                       | 200       | 62.5       |      |                |
| Excellent                                                                                  | 54        | 16.9       |      |                |

| Response                                                                                                                                                                                                                 | Frequency | Percentage | Mean | Std. Deviation |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| [5]. The <i>toyyiban</i> aspect related to the sustainability of the products and services                                                                                                                               |           |            |      |                |
| Satisfactory                                                                                                                                                                                                             | 12        | 3.8        | 3.89 | 0.704          |
| Average                                                                                                                                                                                                                  | 63        | 19.7       |      |                |
| Good                                                                                                                                                                                                                     | 194       | 60.6       |      |                |
| Excellent                                                                                                                                                                                                                | 51        | 15.9       |      |                |
| [6]. Halal knowledge to identify the critical ingredients in food preparation                                                                                                                                            |           |            |      |                |
| Poor                                                                                                                                                                                                                     | 4         | 1.3        | 3.68 | 0.877          |
| Satisfactory                                                                                                                                                                                                             | 29        | 9.1        |      |                |
| Average                                                                                                                                                                                                                  | 78        | 24.4       |      |                |
| Good                                                                                                                                                                                                                     | 162       | 50.6       |      |                |
| Excellent                                                                                                                                                                                                                | 47        | 14.7       |      |                |
| [7]. Knowledge on <i>toyyib</i> to realise the critical points (e.g., transportation, receiving and storing inventory, processing foods, raw materials and ingredients, and serving) in the supply chain (farm to fork). |           |            |      |                |
| Poor                                                                                                                                                                                                                     | 2         | .6         | 3.68 | 0.767          |
| Satisfactory                                                                                                                                                                                                             | 23        | 7.2        |      |                |
| Average                                                                                                                                                                                                                  | 80        | 25.0       |      |                |
| Good                                                                                                                                                                                                                     | 185       | 57.8       |      |                |
| Excellent                                                                                                                                                                                                                | 30        | 9.4        |      |                |
| [8]. Knowledge to maintain good gesture (e.g., behaviour, appearance, Islamic greetings etc.), presentation (presenting foods, presenting yourself, and overall presentation of the restaurant), and service.            |           |            |      |                |
| Average                                                                                                                                                                                                                  | 42        | 13.1       | 4.06 | 0.565          |
| Good                                                                                                                                                                                                                     | 217       | 67.8       |      |                |
| Excellent                                                                                                                                                                                                                | 61        | 19.1       |      |                |

### 5.3.2. Management Responsibilities (MGT)

One of the criteria that most standards and studies in the past had in common was management responsibilities. In fact, this has been listed as the first requirement by halal standard, MS1500:2019. This component includes the arrangement of training for staff, the formation of an internal halal committee, the preparation and storage of halal documents, and effective communication. These responsibilities are crucial for any organisation that is committed to halal principles and practises, as they ensure compliance with the halal standards and other requirements.

The respondents were requested to provide their responses based on a five-point Likert scale ('Strongly agree-5', 'Agree-4', 'Neutral-3', 'Disagree-2', and 'Strongly disagree-1') under eight statements regarding their management responsibilities of best halal compliance practices. This HCR component is to measure the compliance level related to management responsibilities in the halal restaurants. MGT refers to the duties and responsibilities that ensure halal practices are followed and implemented within the restaurant. For example, formation of the Internal Halal Committee (IHC), appointing Muslim workers, providing halal training to employees, arranging meetings, internal auditing, providing facilities to meet faith-based needs, etc.

Data collected from a total of 320 respondents under this component is presented in Table 5. 3. From the table it can be observed that only 6.3 percent of the respondents remained neutral regarding their concern about the halal integrity in food preparation. The remaining 64.1 percent and 29.7 percent of the respondents expressed their response as 'agree' and 'strongly agree' respectively. Likewise, 89.7 percent ('agree'-64.1% and 'strongly agree'-25.6%) of the respondents agreed to have a unit of Internal Halal Committee (IHC). Only 9.7 percent of them were neutral, whereas 2 respondents (0.6%) strongly disagreed to the second statement of MGT. Interestingly, same number (2) of respondents were found to express their response as 'Strongly disagree' against other statements that include MG3, MGT5, MGT7, and MGT8. Simultaneously, more than 80 percent of the respondents agreed that the responsibility of leading internal halal control system has been given to Muslim personnel. While 2.5 percent of the respondents disagreed with MGT4 (arranging regular training on halal awareness for the employees) statement, 34.7 percent of them were neutral, and the rest of them either agreed (52.5%) or strongly agreed (10.3%). Regarding the statement MGT5, that

enquires about ensuring ensures sufficient resources to implement internal halal control system, 19.7 percent of the respondents were neutral, 66.6 percent of the responses were 'Agree', 11.9 percent were 'Strongly agree', and only 1.3 percent were 'Disagree'. All respondents agreed MGT6 (Management ensures that the Muslim workers are allowed to perform their prayers) except 9.4 percent of them to be 'Neutral'. The practice of involving staffs in decision making process (MGT7) have been observed among 72.5 percent ('Agree'-50.3% and 'Strongly agree'-12.2%) of halal certified restaurant managers and/or owners. Although, 19.7 percent of them were neutral and 3.8 percent of them disagreed. The final statement (MGT8) inquiries about regular meetings arranged by the IHC to address and solve any halal related issue. Around 55 percent of the responses were either 'Agree' (44.7%) or 'Strongly agree' (10%) whereas 40.3 percent were neutral. Moreover, 4.4 percent of the respondents disagreed to conduct regular meetings by the IHC to address and solve any halal related issue. The mean score of all statements were above 3.5 and around 4.0 which indicate an affirmative response of practicing management responsibilities to ensure halal compliance by the respondents.

Table 5. 3 Responses under HCR Component-2: Management Responsibilities (MGT)

| Response                                                                                                                                                    | Frequency | Percentage | Mean | Std. Deviation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 1. Management is concerned about the halal integrity in food preparation (e.g., cleaning, use of tools, use of ingredients, cooking process, serving, etc.) |           |            |      |                |
| Neutral                                                                                                                                                     | 20        | 6.3        | 4.23 | 0.553          |
| Agree                                                                                                                                                       | 205       | 64.1       |      |                |
| Strongly Agree                                                                                                                                              | 95        | 29.7       |      |                |
| 2. Management has formed a unit of Internal Halal Committee (IHC)                                                                                           |           |            |      |                |
| Strongly Disagree                                                                                                                                           | 2         | 0.6        | 4.14 | 0.625          |
| Neutral                                                                                                                                                     | 31        | 9.7        |      |                |
| Agree                                                                                                                                                       | 205       | 64.1       |      |                |
| Strongly Agree                                                                                                                                              | 82        | 25.6       |      |                |

| Response                                                                                                                                       | Frequency | Percentage | Mean | Std. Deviation |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 3. The responsibility of internal halal control system to lead has been given to Muslim personnel                                              |           |            |      |                |
| Strongly Disagree                                                                                                                              | 2         | 0.6        | 4.13 | 0.592          |
| Neutral                                                                                                                                        | 26        | 8.1        |      |                |
| Agree                                                                                                                                          | 219       | 68.4       |      |                |
| Strongly Agree                                                                                                                                 | 73        | 22.8       |      |                |
| 4. Management arranges regular training on halal awareness for the employees                                                                   |           |            |      |                |
| Disagree                                                                                                                                       | 8         | 2.5        | 3.71 | 0.682          |
| Neutral                                                                                                                                        | 111       | 34.7       |      |                |
| Agree                                                                                                                                          | 168       | 52.5       |      |                |
| Strongly Agree                                                                                                                                 | 33        | 10.3       |      |                |
| 5. Management ensures sufficient resources (e.g., manpower, facility, finances, and infrastructure) to implement internal halal control system |           |            |      |                |
| Strongly Disagree                                                                                                                              | 2         | 0.6        | 3.88 | 0.639          |
| Disagree                                                                                                                                       | 4         | 1.3        |      |                |
| Neutral                                                                                                                                        | 63        | 19.7       |      |                |
| Agree                                                                                                                                          | 213       | 66.6       |      |                |
| Strongly Agree                                                                                                                                 | 38        | 11.9       |      |                |
| 6. Management ensures that the Muslim workers are allowed to perform their prayers                                                             |           |            |      |                |
| Neutral                                                                                                                                        | 30        | 9.4        | 4.15 | 0.560          |
| Agree                                                                                                                                          | 213       | 66.6       |      |                |
| Strongly Agree                                                                                                                                 | 77        | 24.1       |      |                |
| 7. IHC involves the staff in decision making process relevant to halal management                                                              |           |            |      |                |
| Strongly Disagree                                                                                                                              | 2         | 0.6        | 3.70 | 0.754          |
| Disagree                                                                                                                                       | 12        | 3.8        |      |                |
| Neutral                                                                                                                                        | 106       | 33.1       |      |                |
| Agree                                                                                                                                          | 161       | 50.3       |      |                |
| Strongly Agree                                                                                                                                 | 39        | 12.2       |      |                |
| 8. Regular meetings are arranged by the IHC to address and solve any issue                                                                     |           |            |      |                |
| Strongly Disagree                                                                                                                              | 2         | 0.6        | 3.59 | 0.754          |

| Response       | Frequency | Percentage | Mean | Std. Deviation |
|----------------|-----------|------------|------|----------------|
| Disagree       | 14        | 4.4        |      |                |
| Neutral        | 129       | 40.3       |      |                |
| Agree          | 143       | 44.7       |      |                |
| Strongly Agree | 32        | 10.0       |      |                |

### 5.3.3. Premise, Location, and Design (PLD)

Premise has been found to be crucial for halal compliance, especially when it is about restaurants. Several requirements by MS1500:2019 under this component include layout and location, process flow design, sanitary and prayer facilities, and segregation from pig farms. Additionally, MS1500:2019 also mandates that premises used for the production and storage of food must be kept clean, with no presence of vermin, pests, or other animals. These requirements were further supported by previous studies (Zannierah et al., 2012; Fatimah et al., 2011).

This component of HCR investigates the compliance level of halal restaurants in terms of their premise layout, location and design. The respondents were requested to provide their responses based on a five-point Likert scale ('Strongly agree-5', 'Agree-4', 'Neutral-3', 'Disagree-2', and 'Strongly disagree-1') against 9 (nine) statements as presented in Table 5. 4. The first two statements were to know whether the premise design allows a proper service flow and employee flow. The responses were almost similar in both cases. Around 60 percent of the respondents' response was 'Agree', around 14 percent was 'Strongly agree', and none of them disagreed. However, more than 23 percent of the respondents were neutral about their premise design that allows proper service flow and employee flow. The responses against the third statement show that 71.3 percent of the respondents agreed, and 15.6 percent strongly agreed, about their premise design that facilitates a proper cleaning process for hygiene maintenance, although 13.8 percent of them were neutral. Likewise, more than 78 percent ('Agree'- 61.9% and 'Strongly agree'- 16.6%) of the respondents were found to have Muslim-friendly sanitary facilities, and 21.6 percent of them were neutral.



A dedicated space for prayer has been found to be provided by 80.6 percent of the respondents ('Agree'- 63.4% and 'Strongly agree'- 17.2%). However, eight negative responses were identified indicating not have a dedicated space for prayer. Most of the respondents agreed (63.3%) or strongly agreed (23.1%) on the statement of not allowing any pets or animals into the premise, although 11.6 percent of them were neutral in this regard. Simultaneously, segregation of praying area from food processing area was found in 70.6 percent ('Agree'- 55.6% and 'Strongly agree'- 15.0%) of the restaurants, and 28.1 percent of the respondents were neutral in response to this statement. While 81.9 percent of the responses were 'Agree' (57.2%) and 'Strongly agree' (24.7%) regarding the effective insulation (at least 5km) of the premise from a pig farm or its processing activities, 18.1 percent of them were neutral. The last statement was to ensure that the premises do not display any sign, picture, object, or symbol that goes against halal standard. In this regard, only few respondents (1.9%) disagreed, whereas 84.4 percent of them responded as 'Agree' (63.1%) and 'Strongly agree' (21.3%), and the percentage of neutral respondents was 13.8%.

Table 5. 4 Responses under HCR Component-3: Premises, Location, and Design (PLD)

| Response                                                                                        | Frequency | Percentage | Mean | Std. Deviation |
|-------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 1. Layout of the premise allows a proper service process flow                                   |           |            |      |                |
| Neutral                                                                                         | 75        | 23.4       | 3.91 | 0.609          |
| Agree                                                                                           | 199       | 62.2       |      |                |
| Strongly Agree                                                                                  | 46        | 14.4       |      |                |
| 2. Layout of the premise ensures a proper employee flow                                         |           |            |      |                |
| Neutral                                                                                         | 76        | 23.8       | 3.92 | 0.623          |
| Agree                                                                                           | 194       | 60.6       |      |                |
| Strongly Agree                                                                                  | 50        | 15.6       |      |                |
| 3. The layout design of the premise facilitates proper cleaning process for hygiene maintenance |           |            |      |                |
| Neutral                                                                                         | 44        | 13.8       | 4.01 | 0.537          |

| Response                                                                                                                   | Frequency | Percentage | Mean | Std. Deviation |
|----------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| Agree                                                                                                                      | 228       | 71.3       |      |                |
| Strongly Agree                                                                                                             | 48        | 15.0       |      |                |
| 4. Muslim friendly sanitary facilities (e.g., water friendly toilets, basins, soap, gender segregation, etc.) are provided |           |            |      |                |
| Neutral                                                                                                                    | 69        | 21.6       | 3.95 | 0.616          |
| Agree                                                                                                                      | 198       | 61.9       |      |                |
| Strongly Agree                                                                                                             | 53        | 16.6       |      |                |
| 5. A dedicated space for prayer ( <i>solat</i> ) is provided for the Muslim workers                                        |           |            |      |                |
| Strongly Disagree                                                                                                          | 4         | 1.3        | 3.94 | 0.708          |
| Disagree                                                                                                                   | 4         | 1.3        |      |                |
| Neutral                                                                                                                    | 54        | 16.9       |      |                |
| Agree                                                                                                                      | 203       | 63.4       |      |                |
| Strongly Agree                                                                                                             | 55        | 17.2       |      |                |
| 6. Pets and other animals are not allowed inside the premise                                                               |           |            |      |                |
| Neutral                                                                                                                    | 37        | 11.6       | 4.12 | 0.578          |
| Agree                                                                                                                      | 209       | 65.3       |      |                |
| Strongly Agree                                                                                                             | 74        | 23.1       |      |                |
| 7. Praying area is segregated from any food processing (Kitchen) area                                                      |           |            |      |                |
| Disagree                                                                                                                   | 4         | 1.3        | 3.84 | 0.677          |
| Neutral                                                                                                                    | 90        | 28.1       |      |                |
| Agree                                                                                                                      | 178       | 55.6       |      |                |
| Strongly Agree                                                                                                             | 48        | 15.0       |      |                |
| 8. The premise is effectively segregated and well insulated (at least 5km) from pig farm or its processing activities      |           |            |      |                |
| Neutral                                                                                                                    | 58        | 18.1       | 4.07 | 0.652          |
| Agree                                                                                                                      | 183       | 57.2       |      |                |
| Strongly Agree                                                                                                             | 79        | 24.7       |      |                |
| 9. The premise does not display any sign, picture, object, or symbol that goes against halal standard                      |           |            |      |                |
| Disagree                                                                                                                   | 6         | 1.9        | 4.04 | 0.652          |
| Neutral                                                                                                                    | 44        | 13.8       |      |                |

| Response       | Frequency | Percentage | Mean | Std. Deviation |
|----------------|-----------|------------|------|----------------|
| Agree          | 202       | 63.1       |      |                |
| Strongly Agree | 68        | 21.3       |      |                |

#### 5.3.4. Hygiene and food safety (HFS)

All standards, rating systems, and previous studies are unanimous on the significance of this component in the halal food management system. In restaurants, it is even more critical. The recent non-compliance issues were mostly related to hygiene and food safety. Several requirements to ensure compliance with this HCR component include GHP grading, cleanliness, pest control, hygiene, lighting, ventilation, food storage, furniture, wash basins, toilets, drainage facilities, and disposal of waste. These requirements may seem onerous, but they are necessary to guarantee the halal food management system is up to industry standards.

This component of HCR investigates the compliance level of halal restaurants in terms of their practice for ensuring hygiene and food safety. The first query was whether the restaurants had any Good Hygiene Practice (GHP) grading by the Malaysian Ministry of Health. Approximately, 18 percent of the restaurants did not have a GHP grading or the GHP grading application was under processing. Additionally, the respondents were requested to provide their responses based on a five-point Likert scale ('Strongly agree-5', 'Agree-4', 'Neutral-3', 'Disagree-2', and 'Strongly disagree-1') against 10 (ten) statements as presented in Table 5. 5. About 72 percent of the respondents agreed, and 24 percent strongly agreed, that they regularly clean the equipment and kitchen utensils. Two statements were made to determine whether the premises' design allows for proper service and employee flow. A Similar percentage of the respondents reported that they ensure proper ventilation for safe storage of foods and a pleasant atmosphere at the kitchen and storage area, and they regularly clean the tabletops and chairs.

More than 71 percent of the responses were 'Agree' and 'Strongly agree' on the statements about having a process to ensure no dripping and clogging in water pipes in

the kitchen and restroom, and carrying out pest control measures on a regular basis. However, in both cases more than 25 percent of the respondents were neutral. None of the respondents disagreed with the remaining five statements that include (i) frequent cleaning of surfaces that come into direct contact with foods, (ii) cleaning of washroom area, (iii) storing cleaning items separated from food processing area, (iv) frequent cleaning of garbage cans, and (v) ensuring adequate lighting to identify presence of any non-hygiene matter. All the responses were either ‘Agree’ or ‘Strongly agree’, although around 10 percent of the respondents were neutral in all five cases.

Table 5. 5 Responses under HCR Component-4: Hygiene and food safety (HFS)

| Response                                                                                                                         | Frequency | Percentage | Mean | Std.<br>Deviation |
|----------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|-------------------|
| 1. Do you have a Good Hygiene Practice (GHP) grading for your restaurant?                                                        |           |            |      |                   |
| "No grade" or "Application is under processing"                                                                                  | 57        | 17.8       | 3.12 | 1.390             |
| Grade D                                                                                                                          | 71        | 22.2       |      |                   |
| Grade C                                                                                                                          | 12        | 3.8        |      |                   |
| Grade B                                                                                                                          | 130       | 40.6       |      |                   |
| Grade A                                                                                                                          | 46        | 14.4       |      |                   |
| 2. All equipment (e.g., oven, deep frier, freezer, baking sheets, etc.) and kitchen utensils are cleaned and sanitised regularly |           |            |      |                   |
| Neutral                                                                                                                          | 13        | 4.1        | 4.20 | 0.492             |
| Agree                                                                                                                            | 230       | 71.9       |      |                   |
| Strongly Agree                                                                                                                   | 77        | 24.1       |      |                   |
| 3. Proper ventilation is ensured for safe storage of foods and pleasant atmosphere at kitchen and storage area                   |           |            |      |                   |
| Neutral                                                                                                                          | 22        | 6.9        | 4.16 | 0.524             |
| Agree                                                                                                                            | 224       | 70.0       |      |                   |
| Strongly Agree                                                                                                                   | 74        | 23.1       |      |                   |

| Response                                                                                                                | Frequency | Percentage | Mean | Std.<br>Deviation |
|-------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|-------------------|
| 4. Tabletops, and chairs are cleaned regularly after every certain period (e.g., every 1hr, 30mins)                     |           |            |      |                   |
| Neutral                                                                                                                 | 22        | 6.9        | 4.12 | 0.493             |
| Agree                                                                                                                   | 238       | 74.4       |      |                   |
| Strongly Agree                                                                                                          | 60        | 18.8       |      |                   |
| 5. There is a process to ensure no dripping and clogging in water pipes in kitchen and restroom                         |           |            |      |                   |
| Disagree                                                                                                                | 6         | 1.9        | 3.83 | 0.658             |
| Neutral                                                                                                                 | 82        | 25.6       |      |                   |
| Agree                                                                                                                   | 191       | 59.7       |      |                   |
| Strongly Agree                                                                                                          | 41        | 12.8       |      |                   |
| 6. Pest control measure is taken regularly to eliminate any presence of cockroaches, ants, flies, rats, etc             |           |            |      |                   |
| Disagree                                                                                                                | 2         | .6         | 3.88 | 0.660             |
| Neutral                                                                                                                 | 86        | 26.9       |      |                   |
| Agree                                                                                                                   | 182       | 56.9       |      |                   |
| Strongly Agree                                                                                                          | 50        | 15.6       |      |                   |
| 7. Surfaces that come in direct contact of foods are cleaned after every task with clean towel/wipes/tissue             |           |            |      |                   |
| Neutral                                                                                                                 | 27        | 8.4        | 4.09 | 0.502             |
| Agree                                                                                                                   | 237       | 74.1       |      |                   |
| Strongly Agree                                                                                                          | 56        | 17.5       |      |                   |
| 8. Wash basins, toilet sits, and toilet floors are cleaned frequently                                                   |           |            |      |                   |
| Neutral                                                                                                                 | 13        | 4.1        | 4.16 | 0.465             |
| Agree                                                                                                                   | 243       | 75.9       |      |                   |
| Strongly Agree                                                                                                          | 64        | 20.0       |      |                   |
| 9. Cleaning items such as detergent, mops, sanitizers, wipes, etc. are carefully stored away from food preparation area |           |            |      |                   |
| Neutral                                                                                                                 | 41        | 12.8       | 4.06 | 0.557             |
| Agree                                                                                                                   | 220       | 68.8       |      |                   |

| Response                                                                      | Frequency | Percentage | Mean | Std.<br>Deviation |
|-------------------------------------------------------------------------------|-----------|------------|------|-------------------|
| Strongly Agree                                                                | 59        | 18.4       |      |                   |
| 10. Garbage cans are cleaned frequently                                       |           |            |      |                   |
| Neutral                                                                       | 33        | 10.3       | 4.06 | .510              |
| Agree                                                                         | 236       | 73.8       |      |                   |
| Strongly Agree                                                                | 51        | 15.9       |      |                   |
| 11. There is adequate lighting to identify presence of any non-hygiene matter |           |            |      |                   |
| Neutral                                                                       | 36        | 11.3       | 4.04 | 0.512             |
| Agree                                                                         | 236       | 73.8       |      |                   |
| Strongly Agree                                                                | 48        | 15.0       |      |                   |

### 5.3.5. Human resources and culture (HRC)

Although not explicitly listed as a separate component in MS1500:2019, some of the sub components are indirectly stated in the standard and other guidelines. For example, Baharuddin and Ismail (2018) stated the importance of human resource capability in terms of training, providing Muslim-friendly services, and availability of Muslim personnel. Likewise, a working culture, that reflects Islamic morals, was stated to be significant by Hall, and Ballantine (2012) and Zannierah and Marzuki (2016). Such culture may include health condition of staff, training on halal and Muslim-friendly services, code of conduct, and appearance (Ahmad, 2018).

Halal compliance practices under this component were investigated from five different aspects as presented in Table 5. 6. The compliance performance was scored against their responses based on a five-point Likert scale ('Strongly agree-5', 'Agree-4', 'Neutral-3', 'Disagree-2', and 'Strongly disagree-1'). Almost all the respondents ('Agree'-60.6% and 'Strongly agree'- 37.5%) reported their staff maintaining good personal hygiene. Under the second statement, which was about maintaining a code of conduct in the workplace that reflects the morale of Islamic culture, 22.5 percent of the

respondents were neutral, whereas the rest of the responses were either ‘Agree’ (57.5%) or ‘Strongly agree’ (18.8%).

More than 40 percent of the respondents remained neutral about providing training to their staff on different aspects of halal, although 40.9 percent responded as ‘Agree’ and another 12.8 percent as ‘Strongly agree’. Simultaneously, 19 respondents (5.9% of all) disagreed about providing training to their staff on different aspects of halal. The final investigation under this component was if all food handlers of respective restaurants have received training on food handling. In this regard, 21.3 percent of the respondents were neutral, 54.1 percent responded as ‘Agree’, and 22.8 percent responded as ‘Strongly agree’, although only 6 of the respondents (1.9%) disagreed (Table 5. 6).

Table 5. 6 Responses under HCR Component-5: Human resources and culture (HRC)

| Response                                                                                                                                                                | Frequency | Percentage | Mean | Std. Deviation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 1. All staff maintain a good personal hygiene                                                                                                                           |           |            |      |                |
| Neutral                                                                                                                                                                 | 6         | 1.9        | 4.36 | 0.517          |
| Agree                                                                                                                                                                   | 194       | 60.6       |      |                |
| Strongly Agree                                                                                                                                                          | 120       | 37.5       |      |                |
| 2. The code of conduct (e.g., greetings, employee appearance, communication with the customers) in the workplace reflects a morale of Islamic culture in the restaurant |           |            |      |                |
| Disagree                                                                                                                                                                | 4         | 1.3        | 3.94 | 0.678          |
| Neutral                                                                                                                                                                 | 72        | 22.5       |      |                |
| Agree                                                                                                                                                                   | 184       | 57.5       |      |                |
| Strongly Agree                                                                                                                                                          | 60        | 18.8       |      |                |
| 3. A specific designed attire is provided for all staff following the KKM guidelines                                                                                    |           |            |      |                |
| Disagree                                                                                                                                                                | 30        | 9.4        | 3.72 | 0.862          |
| Neutral                                                                                                                                                                 | 87        | 27.2       |      |                |
| Agree                                                                                                                                                                   | 147       | 45.9       |      |                |
| Strongly Agree                                                                                                                                                          | 56        | 17.5       |      |                |

| Response                                                                                                                                                                  | Frequency | Percentage | Mean | Std. Deviation |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 4. Training on different aspects of halal (Halal file, internal halal auditing, Halal marketing, halal hospitality service, halal ingredients, etc.) is provided to staff |           |            |      |                |
| Disagree                                                                                                                                                                  | 19        | 5.9        | 3.61 | 0.785          |
| Neutral                                                                                                                                                                   | 129       | 40.3       |      |                |
| Agree                                                                                                                                                                     | 131       | 40.9       |      |                |
| Strongly Agree                                                                                                                                                            | 41        | 12.8       |      |                |
| 5. All food handlers have received training on food handling                                                                                                              |           |            |      |                |
| Disagree                                                                                                                                                                  | 6         | 1.9        | 3.98 | 0.719          |
| Neutral                                                                                                                                                                   | 68        | 21.3       |      |                |
| Agree                                                                                                                                                                     | 173       | 54.1       |      |                |
| Strongly Agree                                                                                                                                                            | 73        | 22.8       |      |                |

#### 5.3.6. Branding, packaging, and labelling (BPL)

Branding, packaging, and labelling are important for any business, including halal-certified restaurants, because they help establish the identity and reputation of the business and its products. In the case of a halal-certified restaurant, these elements can be particularly important for attracting and retaining customers who are looking for dinning services that are halal compliant. Here are a few specific ways in which branding, packaging, and labelling can be important for halal-certified restaurants:

A strong brand can help a halal-certified restaurant stand out in a crowded market and build trust with customers. This can include using a consistent visual identity, such as name, a logo and colour scheme, as well as developing a brand voice and personality that reflects the values of the business (Tieman, 2017). Simultaneously, packaging can play a significant role in the presentation and appeal of a restaurant's products. For a halal-certified restaurant, packaging should be designed to convey the halal status of the products clearly and accurately (Adura Mohd Yusoff et al., 2015; Department of Standards Malaysia., 2014). Additionally, proper labelling is important for any business, but it can be particularly critical for halal-certified restaurants.



Customers who are looking for halal food products need to be able to easily identify which items meet their dietary requirements, and clear and accurate labelling can help with this. Labelling should also include any other relevant information, such as ingredients, allergens, and nutritional information (Nursalwani et al., 2021; Rejeb et al., 2021; G. Zhou et al., 2016).

This sixth component of HCR investigates five aspects of best halal compliance practices by the restaurants where the responses were collected based on a five-point Likert scale ('Strongly agree-5', 'Agree-4', 'Neutral-3', 'Disagree-2', and 'Strongly disagree-1') as presented in Table 5. 7. Under the first statement, which was about whether the overall packaging design (i.e., sign, symbols, logo, name, and pictures) is compliant to *shari'ah*, 12.8 percent of the respondents were neutral, whereas rest of the responses were either 'Agree' (67.8%) or 'Strongly agree' (19.4%). Almost all the respondents ('Agree'-70.3% and 'Strongly agree'- 25.3%) reported maintaining hygiene and cleanliness during packing foods for home delivery or take away order. Approximately 20 percent of the respondents remained neutral about *shari'ah* compliance of all marketing activities, although 64.4 percent responded as 'Agree' and another 14.7 percent as 'Strongly agree'. However, four respondents responded as 'Disagree', in this regard. Additionally, none of the respondents disagreed with the last two statements. It was observed that, majority of the respondents ('Agree'- 56.9% and 'Strongly agree'- 14.1%) use packaging materials that are non-hazardous and halal compliant, while only 29 percent of them were neutral, in such a case. The final investigation under this component was whether the labelling and information on food menus and products fulfilled the requirements of halal certification. In this regard, 11.9 percent of the respondents were neutral, 72.8 percent responded "Agree," and 15.3 percent responded "strongly Agree."

Table 5. 7 Responses under HCR Component-6: Branding, packaging, and labelling (BPL)

| Response                                                                                                                      | Frequency | Percentage | Mean | Std. Deviation |
|-------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 1. The packaging design, sign, symbols, logo, name, pictures are compliant to <i>shari'ah</i>                                 |           |            |      |                |
| Neutral                                                                                                                       | 41        | 12.8       | 4.07 | 0.564          |
| Agree                                                                                                                         | 217       | 67.8       |      |                |
| Strongly Agree                                                                                                                | 62        | 19.4       |      |                |
| 2. Hygiene and cleanliness are maintained during packing foods for home delivery or take away order                           |           |            |      |                |
| Neutral                                                                                                                       | 14        | 4.4        | 4.21 | 0.504          |
| Agree                                                                                                                         | 225       | 70.3       |      |                |
| Strongly Agree                                                                                                                | 81        | 25.3       |      |                |
| 3. All marketing activities (e.g., leaflets, social media advertising etc.) are in compliance with <i>shari'ah</i> principles |           |            |      |                |
| Disagree                                                                                                                      | 4         | 1.3        | 3.93 | 0.624          |
| Neutral                                                                                                                       | 63        | 19.7       |      |                |
| Agree                                                                                                                         | 206       | 64.4       |      |                |
| Strongly Agree                                                                                                                | 47        | 14.7       |      |                |
| 4. All packaging materials are non-hazardous and halal compliant                                                              |           |            |      |                |
| Neutral                                                                                                                       | 93        | 29.1       | 3.85 | 0.640          |
| Agree                                                                                                                         | 182       | 56.9       |      |                |
| Strongly Agree                                                                                                                | 45        | 14.1       |      |                |
| 5. Labelling and information of our food menus and products fulfils the requirements of halal certification                   |           |            |      |                |
| Neutral                                                                                                                       | 38        | 11.9       | 4.03 | 0.521          |
| Agree                                                                                                                         | 233       | 72.8       |      |                |
| Strongly Agree                                                                                                                | 49        | 15.3       |      |                |

### **5.3.7. Image and level of customer satisfaction (ICS)**

This component is another inclusion in HCR that is not included in MS1500:2019. It ensures that the halal-certified businesses (in this study, the restaurants) maintain a good image and a good customer satisfaction record while complying with halal. This component is vital to the success of the halal certification program, as it helps to protect the brand image and reputation of certified businesses (Fatimah et al., 2011; Sorooshian and Dahan, 2013). The criteria include records of online reviews, feedback from walk-in customers, and online presence on halal apps and web pages.

This component of HCR investigates the minimum as it was the least weighted component found in the AHP survey, which has been discussed in Chapter-3. The first inquiry was about the level of customer satisfaction with the services of respective restaurants. The responses were collected based on a six-point Likert scale where 'Do not have a review' was scored as '0', 'Very Poorly Satisfied' as '1', 'Poorly Satisfied' as '2', 'Average' as '3', 'Satisfied' as '4', and 'Very satisfied' as '5' (Table 5. 8). It was found that 92 respondents representing 28.7 percent of all, did not have a review of customer satisfaction. About eight percent and 12.2 percent of the respondents responded, 'very poorly satisfied' and 'poorly satisfied' respectively. An average satisfaction review was found for 18.8 percent of the respondents. However, 32.5 percent of the respondents had a review of above average satisfaction ('Satisfied'- 27.8% and 'Very satisfied'- 4.7%). Respondents were asked to rate their restaurants based on one (1) to five (5) star rating. Approximately 60 percent of them rated their restaurants as 'four-star' (48.4%) and 'five-star' (10.9%). Three-star rating was found for 36.9 percent of the restaurants, whereas only nine respondents rated their restaurants as 'two-star' and 'one star'. The last statement under this component was whether the respondents believed that their restaurants had a good image and reputation locally. In this regard, 13.4 percent of the respondents were neutral, 68.4 percent of them responded as 'Agree', and 18.1 percent responded as 'Strongly agree'.

Table 5. 8 Responses under HCR Component-7: Image and level of customer satisfaction (ICS)

| Response                                                                                                                                                                                                     | Frequency | Percentage | Mean | Std. Deviation |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 1. As a Halal certified restaurant, do you have any survey on customer satisfaction (e.g., online review, or review from walk-in customers)? If yes, please state the level of your customers' satisfaction. |           |            |      |                |
| Do not have a review                                                                                                                                                                                         | 92        | 28.7       | 2.23 | 3.68           |
| Very Poorly Satisfied                                                                                                                                                                                        | 25        | 7.8        |      |                |
| Poorly Satisfied                                                                                                                                                                                             | 39        | 12.2       |      |                |
| Average                                                                                                                                                                                                      | 60        | 18.8       |      |                |
| Satisfied                                                                                                                                                                                                    | 89        | 27.8       |      |                |
| Very satisfied                                                                                                                                                                                               | 15        | 4.7        |      |                |
| 2. Based on the customer satisfaction and your service, how many stars would you give to your restaurant?                                                                                                    |           |            |      |                |
| One Star                                                                                                                                                                                                     | 2         | .6         | 3.68 | 0.724          |
| Two Star                                                                                                                                                                                                     | 7         | 2.2        |      |                |
| Three Star                                                                                                                                                                                                   | 118       | 36.9       |      |                |
| Four Star                                                                                                                                                                                                    | 155       | 48.4       |      |                |
| Five Star                                                                                                                                                                                                    | 35        | 10.9       |      |                |
| 3. Overall, our restaurant has a good image and reputation locally (i.e., in Malaysia and/or within the service area).                                                                                       |           |            |      |                |
| Neutral                                                                                                                                                                                                      | 43        | 13.4       | 4.05 | 0.561          |
| Agree                                                                                                                                                                                                        | 219       | 68.4       |      |                |
| Strongly Agree                                                                                                                                                                                               | 58        | 18.1       |      |                |

### 5.3.8. Legal requirements (LR)

This component is one of the major requirements in MS1500:2019 that needs to be fulfilled by any business before and after getting halal certification. There are several legal requirements that halal-certified businesses, including restaurants, need to comply with in order to operate in a compliant and ethical manner. Some of the key legal requirements that halal-certified businesses should be aware of include local licensing, anti-typhoid vaccination of food handlers, maintaining a halal file and an updated halal certificate, displaying the halal logo at the front of the restaurants, and maintaining a record of no offence in complying with halal requirements.

Meeting the legal requirements while operating a restaurant business is crucial in halal compliance practice. Hence, this component investigates six aspects of LR where the responses were collected based on a five-point Likert scale ('Strongly agree-5', 'Agree-4', 'Neutral-3', 'Disagree-2', and 'Strongly disagree-1') as presented in Table 5. 9. The first statement was whether all the food handlers of respective restaurants had certificate of anti-typhoid vaccination. More than 89 percent of the respondents had an affirmative response ('Agree'- 62.2% and 'Strongly agree'- 27.2%), although 10 percent of them were neutral and only 0.6 percent of them disagreed. Secondly, majority of the respondents ('Agree'- 49.1% and 'Strongly agree'- 15.3%) confirmed that they properly prepare and maintain documents related to halal inspection. However, 35 percent of them were neutral in this regard. Almost all the participants (92.8%) affirmed that their halal certificate was up to date, although 6.6 percent of the respondents remained neutral on this. Similar percentage (91.2%) of respondents were found to confirm that the halal mark was displayed in front of the restaurant, although few respondents (1.9%) had a negative response. More than 90 percent ('Agree'- 75% and 'Strongly agree'- 16.3%) of the respondents ensured that the right use of halal certification and logo had been preserved, except for 8.8 percent of them who remained neutral. The last investigation under this component was about any type of offences regarding the legal requirements of halal certification experienced by the respondents. It was found that 16.3 percent of the respondents did not experience any offense at all, whereas 51.6 percent of them experienced offense during internal audit only, and the remaining 32.2 percent of the respondents faced minor offence

detected by JAKIM. The mean score of all the investigated items was above 3.5 and around 4.0.

Table 5. 9 Responses under HCR Component-8: legal requirements (LR)

| Response                                                                                                                                                                                                                                 | Frequency | Percentage | Mean | Std. Deviation |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 1. All food handlers have certificate of anti-typhoid vaccination                                                                                                                                                                        |           |            |      |                |
| Disagree                                                                                                                                                                                                                                 | 2         | 0.6        | 4.16 | 0.610          |
| Neutral                                                                                                                                                                                                                                  | 32        | 10.0       |      |                |
| Agree                                                                                                                                                                                                                                    | 199       | 62.2       |      |                |
| Strongly Agree                                                                                                                                                                                                                           | 87        | 27.2       |      |                |
| 2. Documents related to halal inspection are prepared and maintained properly                                                                                                                                                            |           |            |      |                |
| Strongly Disagree                                                                                                                                                                                                                        | 2         | 0.6        | 3.78 | 0.717          |
| Neutral                                                                                                                                                                                                                                  | 112       | 35.0       |      |                |
| Agree                                                                                                                                                                                                                                    | 157       | 49.1       |      |                |
| Strongly Agree                                                                                                                                                                                                                           | 49        | 15.3       |      |                |
| 3. Halal certification is up to date                                                                                                                                                                                                     |           |            |      |                |
| Disagree                                                                                                                                                                                                                                 | 2         | 0.6        | 4.17 | 0.591          |
| Neutral                                                                                                                                                                                                                                  | 21        | 6.6        |      |                |
| Agree                                                                                                                                                                                                                                    | 215       | 67.2       |      |                |
| Strongly Agree                                                                                                                                                                                                                           | 82        | 25.6       |      |                |
| 4. The halal mark is displayed in front of the restaurant                                                                                                                                                                                |           |            |      |                |
| Disagree                                                                                                                                                                                                                                 | 6         | 1.9        | 4.18 | 0.627          |
| Neutral                                                                                                                                                                                                                                  | 21        | 6.6        |      |                |
| Agree                                                                                                                                                                                                                                    | 202       | 63.1       |      |                |
| Strongly Agree                                                                                                                                                                                                                           | 91        | 28.1       |      |                |
| 5. The right use of halal certification and logo has been preserved (e.g., using the logo only for the specific food premise that got certification, no stamping of the halal logo on a food product that has not got halal certificate) |           |            |      |                |
| Neutral                                                                                                                                                                                                                                  | 28        | 8.8        |      |                |
| Agree                                                                                                                                                                                                                                    | 240       | 75.0       |      |                |

| Response                                                                                                   | Frequency | Percentage | Mean | Std. Deviation |
|------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| Strongly Agree                                                                                             | 52        | 16.3       |      |                |
| 6. Have you ever experienced any type of offences regarding the legal requirements of halal certification? |           |            |      |                |
| Minor offence detected by JAKIM                                                                            | 103       | 32.2       | 3.84 | 0.679          |
| Offense during internal audit only                                                                         | 165       | 51.6       |      |                |
| No offense at all                                                                                          | 52        | 16.3       |      |                |

### 5.3.9. Green practice and sustainability (GPS)

The proposed model of HCR in the present study is termed as the BPHCR with the inclusion of the GPS component along with other components (HRC and ICS) that were not included in the MS1500:2019 standard. Green practices and sustainability can be associated with Halal-certified restaurants in several ways. For example, Halal-certified restaurants may choose to source their ingredients from local and organic producers in order to reduce the environmental impact of transportation and support the local economy (Razalli et al., 2012). They may also adopt eco-friendly practices such as using biodegradable or compostable packaging materials, conserving energy and water, and recycling and reducing waste. These practices can help to reduce the environmental impact of the restaurant and support the overall sustainability of the business (Kamisah et al., 2018).

It's worth noting that while Halal certification and sustainability may overlap in some areas, they are not the same thing. Halal certification is primarily concerned with ensuring that food is prepared and handled in a way that is permissible according to Islamic law, while sustainability focuses on minimizing the environmental impact of a business and its operations. However, it is possible for a Halal-certified restaurant to also adopt sustainable practices, and vice versa.

This component investigates sustainability practices of the halal certified restaurants. Such practices are crucial to enhance the best halal compliance practices by restaurants. Therefore, respondents were asked to provide their responses against six relevant statements based on a five-point Likert scale ('Strongly agree-5', 'Agree-4', 'Neutral-3', 'Disagree-2', and 'Strongly disagree-1') as presented in Table 5. 10. More than 90 percent of the respondents provided an affirmative response ('Agree' and 'Strongly Agree') in terms of managing water usage and minimising food waste. Simultaneously, almost the same percentage of them were neutral in both cases, and none of them reported a disagreement. In the case of using eco-friendly brands for cleaning substances and other applications, 37.5 percent of the respondents agreed and 10.9 percent of them strongly agreed. However, 50.3 percent of the respondents were neutral, in this regard, and 1.3 percent of them had a different opinion (disagree). More than 82 percent of the respondents ('Agree'- 27.8% and 'Strongly agree'- 60.0%) confirmed about minimising plastic usage, although 12.2% of them were neutral. The last two statements (5<sup>th</sup> and 6<sup>th</sup>) investigated if the restaurants use disposable items made from recycled materials and if the principles of 3Rs (reduce, reuse, and recycle) are practiced in the restaurant. Similar responses were obtained in both cases where 51.9 percent of the respondents were neutral. A negative response ('Disagree') was found among 6.3 percent and 10 percent of the respondents for both fifth and sixth statements respectively. However, about 42 percent ('Agree'- 34.7% and 'Strongly agree'- 7.2%) of the respondents were found to be using disposable items made from recycled materials. Likewise, 38.2 percent ('Agree'- 29.4% and 'Strongly agree'- 8.8%) of the respondents reported that they practice the principles of the 3 R's in their restaurants.

Table 5. 10 Responses under HCR Component-9: Green practice and sustainability (GPS)

| Response                       | Frequency | Percentage | Mean | Std. Deviation |
|--------------------------------|-----------|------------|------|----------------|
| 1. Water usage is well managed |           |            |      |                |
| Neutral                        | 30        | 9.4        | 4.04 | 0.477          |
| Agree                          | 247       | 77.2       |      |                |
| Strongly Agree                 | 43        | 13.4       |      |                |



| Response                                                                                                                                                        | Frequency | Percentage | Mean | Std. Deviation |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 2. Food waste is minimised                                                                                                                                      |           |            |      |                |
| Neutral                                                                                                                                                         | 27        | 8.4        | 4.04 | 0.469          |
| Agree                                                                                                                                                           | 249       | 77.8       |      |                |
| Strongly Agree                                                                                                                                                  | 44        | 13.8       |      |                |
| 3. Eco-friendly brands are used for cleaning chemical liquids and other applications                                                                            |           |            |      |                |
| Disagree                                                                                                                                                        | 4         | 1.3        | 3.58 | 0.699          |
| Neutral                                                                                                                                                         | 161       | 50.3       |      |                |
| Agree                                                                                                                                                           | 120       | 37.5       |      |                |
| Strongly Agree                                                                                                                                                  | 35        | 10.9       |      |                |
| 4. Use of plastic has been minimised                                                                                                                            |           |            |      |                |
| Neutral                                                                                                                                                         | 89        | 27.8       | 3.84 | 0.614          |
| Agree                                                                                                                                                           | 192       | 60.0       |      |                |
| Strongly Agree                                                                                                                                                  | 39        | 12.2       |      |                |
| 5. We ensure the disposable items (e.g., toilet paper, glass bottles, cardboards, wood boxes, cups, etc.) used in the premise are made from recycled materials. |           |            |      |                |
| Disagree                                                                                                                                                        | 20        | 6.3        | 3.43 | 0.718          |
| Neutral                                                                                                                                                         | 166       | 51.9       |      |                |
| Agree                                                                                                                                                           | 111       | 34.7       |      |                |
| Strongly Agree                                                                                                                                                  | 23        | 7.2        |      |                |
| 6. The principles of 3Rs (reduce, reuse, and recycle) are practiced in our restaurant                                                                           |           |            |      |                |
| Disagree                                                                                                                                                        | 32        | 10.0       | 3.37 | 0.781          |
| Neutral                                                                                                                                                         | 166       | 51.9       |      |                |
| Agree                                                                                                                                                           | 94        | 29.4       |      |                |
| Strongly Agree                                                                                                                                                  | 28        | 8.8        |      |                |

### 5.3.10. Halal supply chain (HSC)

The supply chain is an important factor in halal-certified businesses, including restaurants, because it involves all of the activities, people, and organizations involved in the production, handling, and distribution of goods and services (Adura Mohd Yusoff

et al., 2015). In the context of a halal-certified restaurant, the supply chain includes all of the sources for the ingredients and other products used by the restaurant, as well as any intermediaries or other parties involved in the handling or distribution of these items.

In order to maintain the best practice of halal compliance, it is important for a restaurant to have a supply chain that meets the relevant halal guidelines and standards. This can include sourcing ingredients from suppliers that have been certified as halal and ensuring that these ingredients are handled and prepared in a way that is permissible according to *shari'ah*. Managing the supply chain in a halal-certified restaurant requires careful attention to detail and a strong focus on quality and compliance (Purnomo et al., 2018). It is important for the restaurant to have robust systems in place to track and verify the source and handling of all ingredients and products, and to ensure that they meet the required halal standards at every stage of the supply chain. This can involve working closely with suppliers and other partners, maintaining detail records of loading and unloading items, dedicated vehicle for halal products, driver with knowledge in halal and *toyyib*, and others.

This component of HCR investigated six practices of best halal compliance. The responses were collected based on a five-point Likert scale ('Strongly agree-5', 'Agree-4', 'Neutral-3', 'Disagree-2', and 'Strongly disagree-1') as presented in Table 5. 11. More than 83 percent of the respondents ('Agree'- 64.7% and 'Strongly agree'- 19.4%) had an affirmative response on ensuring the halal certification of suppliers before partnering with them, although 16.9 percent of the respondents were neutral in this regard. Similar responses have been observed about vehicles that are dedicated to carry halal food items. Although 27.2 percent of the responses were neutral, the remaining 55.9 percent and 16.9 percent responses were 'Agree' and 'Strongly agree' respectively. Likewise, 76.3 percent of the respondents agreed and 15.3 percent of them strongly agreed that *toyyiban* aspect (freshness, quality, etc.) is maintained during the transportation of raw ingredients, and 8.4 percent of the respondents were neutral in this case. The practice of keeping detailed records of loading and unloading was investigated under the fourth and fifth statements, respectively. In both cases, around 40 percent of the respondents were neutral, around 45 percent agreed, and more than 11 percent of

them strongly agreed. The last investigation under this component was whether the driver was aware of the halal requirements for handling the inventory items during transportation. It was found that 24.4 percent of the respondents were neutral, 62.2 percent of them agreed, and 12.2 percent of them strongly agreed against this investigation. However, 1.3 percent of the respondents disagreed, in this regard. The minimum mean score of all investigated items under this component was 3.68 and the maximum mean score was 4.07.

Table 5. 11 Responses under HCR Component-10: Halal supply chain (HSC)

| Response                                                                                                                                                         | Frequency | Percentage | Mean | Std. Deviation |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| 1. We ensure our partners have got halal certification for their products/services before partnering with them                                                   |           |            |      |                |
| Neutral                                                                                                                                                          | 54        | 16.9       | 4.03 | 0.603          |
| Agree                                                                                                                                                            | 204       | 63.7       |      |                |
| Strongly Agree                                                                                                                                                   | 62        | 19.4       |      |                |
| 2. Vehicles are dedicated to carry only halal food items                                                                                                         |           |            |      |                |
| Neutral                                                                                                                                                          | 87        | 27.2       | 3.90 | 0.657          |
| Agree                                                                                                                                                            | 179       | 55.9       |      |                |
| Strongly Agree                                                                                                                                                   | 54        | 16.9       |      |                |
| 3. <i>Toyyiban</i> aspect (freshness, quality, etc.) is maintained during the transportation of raw ingredients like vegetables, condiments, fruits, meats, etc. |           |            |      |                |
| Neutral                                                                                                                                                          | 27        | 8.4        | 4.07 | 0.483          |
| Agree                                                                                                                                                            | 244       | 76.3       |      |                |
| Strongly Agree                                                                                                                                                   | 49        | 15.3       |      |                |
| 4. Detail record of loading (e.g., time, location, person-in-charge) are maintained                                                                              |           |            |      |                |
| Neutral                                                                                                                                                          | 129       | 40.3       | 3.72 | 0.665          |
| Agree                                                                                                                                                            | 153       | 47.8       |      |                |
| Strongly Agree                                                                                                                                                   | 38        | 11.9       |      |                |
| 5. Detail record of unloading inventory (e.g., location, time, person-in-charge) are maintained                                                                  |           |            |      |                |

| Response                                                                                                | Frequency | Percentage | Mean | Std. Deviation |
|---------------------------------------------------------------------------------------------------------|-----------|------------|------|----------------|
| Neutral                                                                                                 | 137       | 42.8       | 3.68 | 0.665          |
| Agree                                                                                                   | 147       | 45.9       |      |                |
| Strongly Agree                                                                                          | 36        | 11.3       |      |                |
| 6. The driver is aware of the halal requirements for handling the inventory items during transportation |           |            |      |                |
| Disagree                                                                                                | 4         | 1.3        | 3.85 | 0.629          |
| Neutral                                                                                                 | 78        | 24.4       |      |                |
| Agree                                                                                                   | 199       | 62.2       |      |                |
| Strongly Agree                                                                                          | 39        | 12.2       |      |                |

#### 5.3.11. Descriptive summary of ten (10) HCR components

The selection of these ten HCR components was further justified by gathering the opinion of 20 experts from different organisation in the fields relevant to current study. All the experts were in the zones of “strongly agree” and “agree,” stating their opinion that the selected ten HCR components were significantly important and relevant for the BPHCR model for halal-certified restaurants in Malaysia.

As discussed above, the ten HCR components of best halal compliance practices were scored based on a 5-point scale. The descriptive summary has been presented in Table 5. 12 where the minimum score is 1.0 and maximum score is 5.0. Data shows that all the components’ achieved an average score ranging from 3.70 to 4.0 except the ninth component (ICS) with a mean score of 3.31. Such average score implies an impressive halal compliance practice by the respondents. Similarly, standard deviation was below or around 0.5 for all HCR components except component no. 7 (ICS) with a standard deviation of 0.75. This shows a greater consistency and less spread of the data which is further supported by the variance score of less than 0.3 for all components except component no. 9 (ICS) with a variance of 0.569.

Table 5. 12 Descriptive summary of HCR components

| Descriptive Statistics |     |     |         |         |        |                |          |
|------------------------|-----|-----|---------|---------|--------|----------------|----------|
| No.                    |     | N   | Minimum | Maximum | Mean   | Std. Deviation | Variance |
| 1.                     | KNW | 320 | 2.63    | 5.00    | 3.9785 | 0.51646        | 0.267    |
| 2.                     | MGT | 320 | 2.00    | 5.00    | 3.9402 | 0.43571        | 0.190    |
| 3.                     | PLD | 320 | 3.00    | 5.00    | 3.9771 | 0.44342        | 0.197    |
| 4.                     | HFS | 320 | 3.09    | 5.00    | 3.9750 | 0.38963        | 0.152    |
| 5.                     | HRC | 320 | 2.60    | 5.00    | 3.9187 | 0.52727        | 0.278    |
| 6.                     | BPL | 320 | 3.00    | 5.00    | 4.0169 | 0.45192        | 0.204    |
| 7.                     | ICS | 320 | 2.00    | 5.00    | 3.3161 | 0.75404        | 0.569    |
| 8.                     | LR  | 320 | 2.00    | 5.00    | 4.0312 | 0.42790        | 0.183    |
| 9.                     | GPS | 320 | 2.83    | 5.00    | 3.7193 | 0.46237        | 0.214    |
| 10.                    | HSC | 320 | 2.83    | 5.00    | 3.8729 | 0.49130        | 0.241    |

#### 5.4 HALAL COMPLIANCE RATING (HCR) SCORES

The overall HCR score was calculated applying the HCR tool developed in Chapter 4. The overall HCR scores of all 320 restaurants were calculated using Microsoft Excel by keying in the GWs of ratings, component weights, and the average score of each component. Table 4. 10 presents the findings of the overall HCR scores of 320 restaurants that have been surveyed for this research. The result shows that the maximum HCR score of the restaurants was 0.400, ranking them at the top, and the minimum score was 0.168 for respondent no. 109, ranking them at the bottom.

Data revealed that the range of possible HCR scores for an "Excellent" grade was between 0.400 and less than 0.358. Within this range, there were a total of 19 responders who placed themselves at the top of the list. The next rating was "Very good," and the range of possible HCR scores for this rating ranged from 0.358 to less than 0.273. There were a total of 48 restaurants that were rated outside of the top 19 establishments in this range. Similarly, the highest possible score for a "Good" rating on the HCR was 0.273, while the lowest possible score was less than 0.198, resulting in a total of 238 restaurants. Lastly, the lowest possible score in this area was 0.168, while the highest possible score was 0.198 for the "Satisfactory" rating on the HCR scale. A total of 15 restaurants fell into this category.

Table 5. 13 Ranking, rating, and HCR scores of halal-certified restaurants in Malaysia

| Rank | Alternatives<br>(Halal-certified<br>restaurants) | Overall HCR<br>score | HCR<br>Percentage | Linguistic<br>Rating |
|------|--------------------------------------------------|----------------------|-------------------|----------------------|
| 4.   | Restaurant No. 3                                 | 0.400                | 100%              | Excellent            |
| 5.   | Restaurant No. 4                                 | 0.400                | 100%              | Excellent            |
| 6.   | Restaurant No. 15                                | 0.400                | 100%              | Excellent            |
| —    | —                                                | —                    | —                 | —                    |
| —    | —                                                | —                    | —                 | —                    |
| 23.  | Restaurant No. 118                               | 0.358                | 89.5%             | Very Good            |
| 24.  | Restaurant No. 162                               | 0.358                | 89.5%             | Very Good            |
| 25.  | Restaurant No. 77                                | 0.357                | 89.25%            | Very Good            |
| —    | —                                                | —                    | —                 | —                    |
| —    | —                                                | —                    | —                 | —                    |
| 73.  | Restaurant No. 137                               | 0.273                | 68.25%            | Good                 |
| 74.  | Restaurant No. 91                                | 0.272                | 68.00%            | Good                 |
| 75.  | Restaurant No. 64                                | 0.270                | 67.5%             | Good                 |
| —    | —                                                | —                    | —                 | —                    |
| —    | —                                                | —                    | —                 | —                    |

|      |                    |       |        |              |
|------|--------------------|-------|--------|--------------|
| 308. | Restaurant No. 271 | 0.198 | 49.5%  | Satisfactory |
| 309. | Restaurant No. 101 | 0.195 | 48.75% | Satisfactory |
| 321. | Restaurant No. 109 | 0.168 | 42%    | Satisfactory |

Additionally descriptive statistics of HCR rating are presented in Table 5. 14. Findings revealed that 74.38 percent of the restaurants achieved a "Good" HCR rating, followed by 15 percent of the restaurants achieving a "Very good" rating, and only 19 restaurants (5.94%) were found to achieve an "Excellent" rating for halal compliance practices. Interestingly, no restaurants were found to have a "Poor" rating. The mean HCR score was 0.258 and 65% indicating “Good” rating of HCR. The distribution of linguistic ratings for 320 restaurants has been illustrated in Figure 5. 5. From the findings, it can be concluded that the majority of the halal-certified restaurants are performing "Good" ratings of halal compliance practices, which is the average level of the best practises of HCR model.

Table 5. 14 Descriptive statistics of linguistic ratings of HCR scores

| HCR Percentage Range | Linguistic HCR | Frequency | Percentage | Mean percentage score | Mean HCR score | Std. Dev. |
|----------------------|----------------|-----------|------------|-----------------------|----------------|-----------|
| ≥ 90%                | Excellent      | 19        | 5.94%      | 65%                   | 0.258          | 0.054     |
| 70% to <90%          | Very Good      | 48        | 15.00%     |                       |                |           |
| 50% to <70%          | Good           | 238       | 74.38%     |                       |                |           |
| 30% to <50%          | Satisfactory   | 15        | 4.69%      |                       |                |           |
| Less than 30%        | Poor           | 0         | 0.00%      |                       |                |           |

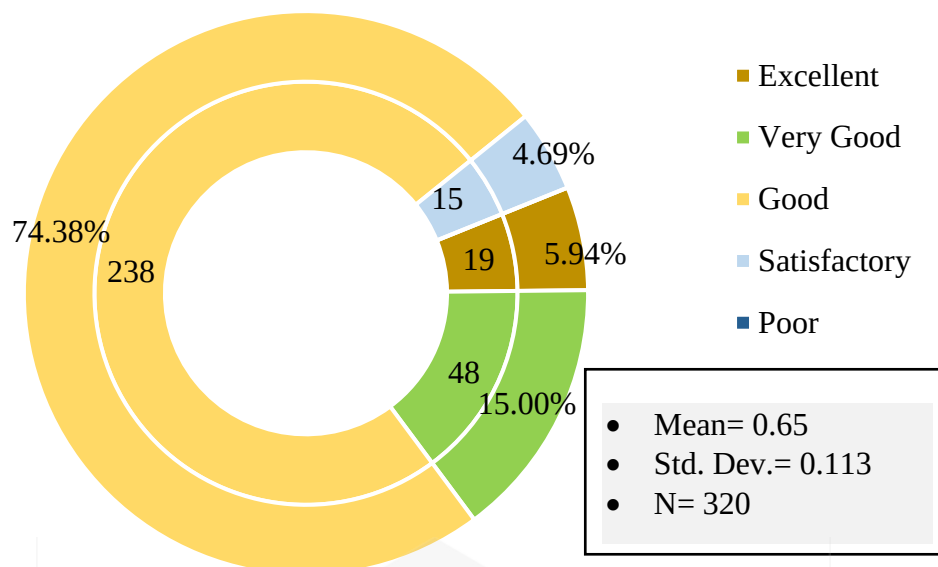


Figure 5. 5 Distribution of different ratings of HCR scores among halal-certified restaurants in Malaysia

## 5.5 BUSINESS PERFORMANCE OF HALAL-CERTIFIED RESTAURANTS

Business performance was measured in terms of both financial and non-financial perspectives. Total ten (10) questions were asked to realise the overall business performance of the respondents. Following sections provide the descriptive results of both financial and non-financial performance of the halal-certified restaurant operators in Malaysia.

### 5.5.1. Financial performance

Respondents were requested to select their level of satisfaction against five financial aspects of a business organisation. These aspects include return on asset (ROA), gross profit ratio, net profit ratio, current ratio, and debt ratio. Responses were collected based on a five-point Likert scale where ('Very poorly satisfied'- 1, Poorly satisfied- 2, Average- 3, Highly satisfied- 4, and 'Very highly satisfied'- 5) as presented in Table 5.15. Data against ROA satisfaction reveals that more than 47 percent responses were



average, 20 percent of the respondents were poorly satisfied, while 29.7 percent of them were highly satisfied. However, same percentage (1.6%) of the respondents were found in case of both ‘very highly satisfied’ and ‘very poorly satisfied’. Likewise, in response to gross profit ratio, same percentage (1.6%) of the respondents were found in case of both ‘very highly satisfied’ and ‘very poorly satisfied’. While on one side 20 percent of the respondents were poorly satisfied with their gross profit ratio, on the other side 28.4 percent of them were highly satisfied, although 47.2 percent of them had average level of satisfaction.

The third query was about the net profit ratio. In this regard, 3.4 percent of the respondents were very poorly satisfied, 20 percent of them were poorly satisfied, 45 percent of them had average level of satisfaction, 29.4 percent of them were highly satisfied, and 2.2 percent of them were very highly satisfied. Half of the respondents (50%) had an average level of satisfaction with their current ratio performance. Although, the percentage of very poorly satisfied and poorly satisfied respondents were 3.8% and 15.3% respectively, 28.7 percent of them were found to be highly satisfied and 2.2 percent of them were very highly satisfied compared to their current ratio.

Finally, it can be observed from Table 5. 15 that more than 55 percent of the respondents had an average level of satisfaction with their debt ratio. While 15.3 percent of them were poorly satisfied, 23.8 percent of them were highly satisfied. Likewise, percentage of very poorly satisfied respondents was 3.4% and the percentage of very highly satisfied respondents was 2.2% compared to their debt ratio performance.

Table 5. 15 Financial performance

| Response                                                        | Frequency | Percentage | Mean | Std. Deviation |
|-----------------------------------------------------------------|-----------|------------|------|----------------|
| 1. Return on Assets (ROA): Net income over total average assets |           |            |      |                |
| Very poorly satisfied                                           | 5         | 1.6        | 3.10 | 0.784          |
| Poorly satisfied                                                | 64        | 20.0       |      |                |
| Average                                                         | 151       | 47.2       |      |                |

| Response                                                 | Frequency | Percentage | Mean | Std. Deviation |
|----------------------------------------------------------|-----------|------------|------|----------------|
| Highly satisfied                                         | 95        | 29.7       |      |                |
| Very highly satisfied                                    | 5         | 1.6        |      |                |
| 2. Gross Profit Ratio: Profit before tax over net sales  |           |            |      |                |
| Very poorly satisfied                                    | 7         | 2.2        | 3.08 | 0.809          |
| Poorly satisfied                                         | 64        | 20.0       |      |                |
| Average                                                  | 151       | 47.2       |      |                |
| Highly satisfied                                         | 91        | 28.4       |      |                |
| Very highly satisfied                                    | 7         | 2.2        |      |                |
| 3. Net Profit Ratio: Profit after tax over net sales     |           |            |      |                |
| Very poorly satisfied                                    | 11        | 3.4        | 3.07 | 0.846          |
| Poorly satisfied                                         | 64        | 20.0       |      |                |
| Average                                                  | 144       | 45.0       |      |                |
| Highly satisfied                                         | 94        | 29.4       |      |                |
| Very highly satisfied                                    | 7         | 2.2        |      |                |
| 4. Current Ratio: Current asset over current liabilities |           |            |      |                |
| Very poorly satisfied                                    | 12        | 3.8        | 3.10 | 0.818          |
| Poorly satisfied                                         | 49        | 15.3       |      |                |
| Average                                                  | 160       | 50.0       |      |                |
| Highly satisfied                                         | 92        | 28.7       |      |                |
| Very highly satisfied                                    | 7         | 2.2        |      |                |
| 5. Debt ratio: Total liability over total assets         |           |            |      |                |
| Very poorly satisfied                                    | 11        | 3.4        | 3.06 | 0.784          |
| Poorly satisfied                                         | 49        | 15.3       |      |                |
| Average                                                  | 177       | 55.3       |      |                |
| Highly satisfied                                         | 76        | 23.8       |      |                |
| Very highly satisfied                                    | 7         | 2.2        |      |                |

### 5.5.2. Non-financial performance

To measure the non-financial performance of the restaurants, five criteria were considered. The first three criteria included customer satisfaction, level of satisfaction in retaining customer, and level of waiting time satisfaction. The responses were collected based on a five-point Likert scale where ('Very poorly satisfied'- 1, Poorly satisfied- 2, Average- 3, Highly satisfied- 4, and 'Very highly satisfied'- 5) as presented in Table 5. 16. Respondents with no record were given a zero (0) score. It was found that more than 12 percent of the respondents did not have a record of customer satisfaction with their services. However, 6.3 percent of the respondents had a record of very poor customer satisfaction, 17.5 percent poor satisfaction, 22.8 percent average satisfaction, 37.5 percent high satisfaction, and 3.8 percent had a very high customer satisfaction record. In case the of satisfaction level with retaining customers, about 38 percent of the respondents were highly satisfied, while 29.4 percent of them had an average satisfaction, and 20.6 percent of them were poorly satisfied. Additionally, 4.4 percent of the respondents were very highly satisfied, although 7.8 percent of them were very poorly satisfied. The third statement was about the satisfaction of the customers with their waiting time. Data revealed that, 11.3 percent of the respondents did not have a record. However, 4.7 percent of the respondents had a record of very poor satisfaction, 18.8 poor satisfaction, 24.7 percent average satisfaction, 37.5 percent high satisfaction, and 3.1 percent of them had a very high waiting time satisfaction record.

The last two criteria of non-financial performance were 'product innovation, and 'competitive position' of the respondents. Product innovation was measured based on five-point Likert scale ('Much worse than competitor'-1, 'Worse than competitor'-2, 'Neutral'-3, 'Better than competitor'-4, 'Much better than competitor'-5) as presented in Table 5. 16. More than 48 percent of the respondents reported that their product innovation was better than competitors, and 8.8 percent reported as much better than competitors. However, 35.3 percent of the respondents were neutral, and 6.3 percent of them responded as worse than competitors.

Lastly, about 56 percent of the respondents reported a better competitive position than their competitors, although more than 30 percent of them were neutral.

Additionally, 6.9 percent of the responses were ‘much better than competitors’ and 5.6 percent of the responses were ‘much worse than competitors’ in terms of their competitive position in the market.

Table 5. 16 Non-financial performance

| Response                                                                                 | Frequency | Percentage | Mean | Std.<br>Deviation |
|------------------------------------------------------------------------------------------|-----------|------------|------|-------------------|
| 1. Level customer satisfaction against your service                                      |           |            |      |                   |
| No record                                                                                | 39        | 12.2       | 2.78 | 1.417             |
| Very poorly satisfied                                                                    | 20        | 6.3        |      |                   |
| Poorly satisfied                                                                         | 56        | 17.5       |      |                   |
| Average                                                                                  | 73        | 22.8       |      |                   |
| Highly satisfied                                                                         | 120       | 37.5       |      |                   |
| Very highly satisfied                                                                    | 12        | 3.8        |      |                   |
| 2. Level of satisfaction retaining customers                                             |           |            |      |                   |
| Very poorly satisfied                                                                    | 25        | 7.8        | 3.10 | 1.032             |
| Poorly satisfied                                                                         | 66        | 20.6       |      |                   |
| Average                                                                                  | 94        | 29.4       |      |                   |
| Highly satisfied                                                                         | 121       | 37.8       |      |                   |
| Very highly satisfied                                                                    | 14        | 4.4        |      |                   |
| 3. Level of waiting time satisfaction by customers                                       |           |            |      |                   |
| No record                                                                                | 36        | 11.3       | 2.82 | 1.364             |
| Very poorly satisfied                                                                    | 15        | 4.7        |      |                   |
| Poorly satisfied                                                                         | 60        | 18.8       |      |                   |
| Average                                                                                  | 79        | 24.7       |      |                   |
| Highly satisfied                                                                         | 120       | 37.5       |      |                   |
| Very highly satisfied                                                                    | 10        | 3.1        |      |                   |
| 4. Product innovation (this means respondent keeps offering new dishes in the menu list) |           |            |      |                   |

| Response                                                                                         | Frequency | Percentage | Mean | Std.<br>Deviation |
|--------------------------------------------------------------------------------------------------|-----------|------------|------|-------------------|
| Much worse than competitor                                                                       | 4         | 1.3        | 3.57 | 0.789             |
| Worse than competitor                                                                            | 20        | 6.3        |      |                   |
| Neutral                                                                                          | 113       | 35.3       |      |                   |
| Better than competitor                                                                           | 155       | 48.4       |      |                   |
| Much better than competitor                                                                      | 28        | 8.8        |      |                   |
| 5. Competitive position (this means products are unique and not accessible in other restaurants) |           |            |      |                   |
| Much worse than competitor                                                                       | 4         | 1.3        | 3.62 | 0.751             |
| Worse than competitor                                                                            | 18        | 5.6        |      |                   |
| Neutral                                                                                          | 97        | 30.3       |      |                   |
| Better than competitor                                                                           | 179       | 55.9       |      |                   |
| Much better than competitor                                                                      | 22        | 6.9        |      |                   |

### 5.5.3. Descriptive summary of business performance (BP)

The overall business performance (BP) of the restaurants was measured by composite average approach combining the scores obtained from the ten items of both financial performance (FP) and non-financial performance (NFP). The descriptive summary of the data findings has been presented in Table 5. 17. The mean score of both FP and NFP is 3.08 and 3.17 respectively which implies an average level of BP performed by the halal-certified restaurants in Malaysia. The standard deviation was below 1.0 and almost similar for both FP and NFP. This shows a greater consistency and less spread of the data which is further supported by the variance score of less than 0.5 for both FP and NFP, as well as for overall BP.

Table 5. 17 Descriptive summary of business performance

| Descriptive Statistics    |     |         |         |        |                |          |
|---------------------------|-----|---------|---------|--------|----------------|----------|
|                           | N   | Minimum | Maximum | Mean   | Std. Deviation | Variance |
| BP                        | 320 | 1.60    | 5.00    | 3.1306 | 0.651          | 0.423    |
| Financial performance     | 320 | 1.00    | 5.00    | 3.0825 | 0.739          | 0.547    |
| Non-financial performance | 320 | 1.60    | 5.00    | 3.1787 | 0.714          | 0.510    |

## 5.6 VALIDATING THE BPHCR MODEL

This section achieves the last objective of the research. It presents the detailed analysis and results of the data collected and used in this research. The best practice of HCR (BPHCR) model is constructed of ten HCR components, and business performance (BP) is constructed of two observed variables. The variable types and codes used in the SEM analysis are presented in 5.18. The two latent variables are BPHCR and BP. The twelve observed variables include KNW, MGT, PLD, HFS, HRC, BPL, ICS, LR, GPS, HSC, FP, and NFP.

Table 5. 18 Variables and analysis codes

| Variable Types     | Variables                                      | PLS-SEM Code |
|--------------------|------------------------------------------------|--------------|
| Latent variables   | Best Practice of Halal Compliance Rating (HCR) | BPHCR        |
|                    | Business Performance                           | BP           |
| Observed Variables | Knowledge on halal and <i>toyyib</i>           | KNW          |
|                    | Management responsibility                      | MGT          |

|  |                                   |     |
|--|-----------------------------------|-----|
|  | Premise location and design       | PLD |
|  | Hygiene and food safety           | HFS |
|  | Human resources and culture       | HRC |
|  | Branding, packaging and labelling | BPL |
|  | Image and customer satisfaction   | ICS |
|  | Legal requirements                | LR  |
|  | Green practice and sustainability | GPS |
|  | Halal supply chain                | HSC |
|  | Financial performance             | FP  |
|  | Non-financial performance         | NFP |

To validate the research model, PLS-SEM analysis has been adopted that include assessment of measurement and structural model. To analyse the data, SmartPLS version 3.2.8 was used. The measurement model establishes the reliability and validity of the construct for the proposed model of best halal compliance practice. Simultaneously, the structural model ascertains the significance of hypothesised relationships. A total of 13 hypothesis were proposed to evaluate the relationship of predictors on the outcome. The hypotheses, that are evaluated in this chapter, are as follows-

- **H<sub>1</sub>** = KNW has significant impact on BPHCR
- **H<sub>2</sub>** = MGT has significant impact on BPHCR
- **H<sub>3</sub>** = PLD has significant impact on BPHCR
- **H<sub>4</sub>** = HFS has significant impact on BPHCR
- **H<sub>5</sub>** = HRC has significant impact on BPHCR
- **H<sub>6</sub>** = BPL has significant impact on BPHCR
- **H<sub>7</sub>** = ICS has significant impact on BPHCR
- **H<sub>8</sub>** = LR has significant impact on BPHCR
- **H<sub>9</sub>** = GPS has significant impact on BPHCR
- **H<sub>10</sub>** = HSC has significant impact on BPHCR
- **H<sub>11</sub>** = BPHCR has significant impact on BP
- **H<sub>12</sub>** = BPHCR has significant impact on FP
- **H<sub>13</sub>** = BPHCR has significant impact on NFP

## **Structural Equation Modelling (SEM)**

A family of statistical models known as Structural Equation Modelling (SEM) aims to explain the correlations between multiple variables within a research model. The measurement model and the structural model are used to make the SEM, which is used to look at how well the models fit together overall and how consistent the theoretical and estimated models are (Hair et al., 2017). Regression analysis, route analysis, and factor analysis are just a few of the multivariate statistical analyses that may be carried out using SEM as a flexible modelling tool. In addition, SEM enables researchers to carry out analysis in four different ways: i) Modelling connections between several predictors and criteria variables, ii) Creating latent variables that are not observable, iii) Model error in measurement for variables that were observed, and iv) Using statistics to compare empirical data with a prior theoretical and measurement assumptions (Rahi, 2017). The social sciences and behaviour fields have demonstrated that SEM with partial least squares estimation (PLS-SEM) is a fantastic approach for the assessment of a construct and evaluating relationships among variables (Bido and Da Silva, 2019). The following sections assess both the measurement model and structural model of this research based on the analysis output employing the SmartPLS V.3.2.8 version of data analysis software.

### **5.6.1 Assessment of Measurement Model**

Quality of the construct in this research has been assessed based on the evaluation of measurement model. As presented in Figure 5.6, the model has two latent variables that are ‘Best Practice of HCR (BPHCR)’ and ‘Business Performance (BP)’. The BPHCR variable has a total of 67 indicators that are clustered under 10 HCR components or observed variables: KNW, MGT, PLD, HFS, HRC, BPL, ICS, LR, GPS, and HSC (Table 5.19). Likewise, the BP variable is composed of 10 indicators that are clustered under 2 components or observed variables: FP and NFP. The assessment of the quality criteria starts with the evaluation of the factor loadings which is followed by testing multicollinearity and establishing both construct reliability and validity.



Table 5. 19 Model components and indicators

| Model                                  | Components | Number of indicators | Indicators                                                         |
|----------------------------------------|------------|----------------------|--------------------------------------------------------------------|
| Best Halal Compliance Practice (BPHCR) | (i). KNW   | 8                    | KNW1, KNW2, KNW3, KNW4, KNW5, KNW6, KNW7, KNW8                     |
|                                        | (ii). MGT  | 8                    | MGT1, MGT2, MGT3, MGT4, MGT5, MGT6, MGT7, MGT8                     |
|                                        | (iii). PLD | 9                    | PLD1, PLD2, PLD3, PLD4, PLD5, PLD6, PLD7, PLD8, PLD9               |
|                                        | (iv). HFS  | 11                   | HFS1, HFS2, HFS3, HFS4, HFS5, HFS6, HFS7, HFS8, HFS9, HFS10, HFS11 |
|                                        | (v). HRC   | 5                    | HRC1, HRC2, HRC3, HRC4, HRC5                                       |
|                                        | (vi). BPL  | 5                    | BPL1, BPL2, BPL3, BPL4, BPL5                                       |
|                                        | (vii). ICS | 3                    | ICS1, ICS2, ICS3                                                   |
|                                        | (viii). LR | 6                    | LR1, LR2, LR3, LR4, LR4, LR6                                       |
|                                        | (ix). GPS  | 6                    | GPS1, GPS2, GPS3, GPS4, GPS5, GPS6                                 |
|                                        | (x). HSC   | 6                    | HSC1, HSC2, HSC3, HSC4, HSC5, HSC6                                 |
| Business Performance (BP)              | (i). FP    | 5                    | FP1, FP2, FP3, FP4, FP5                                            |
|                                        | (ii). NFP  | 5                    | NFP1, NFP2, NFP3, NFP4, NFP5,                                      |

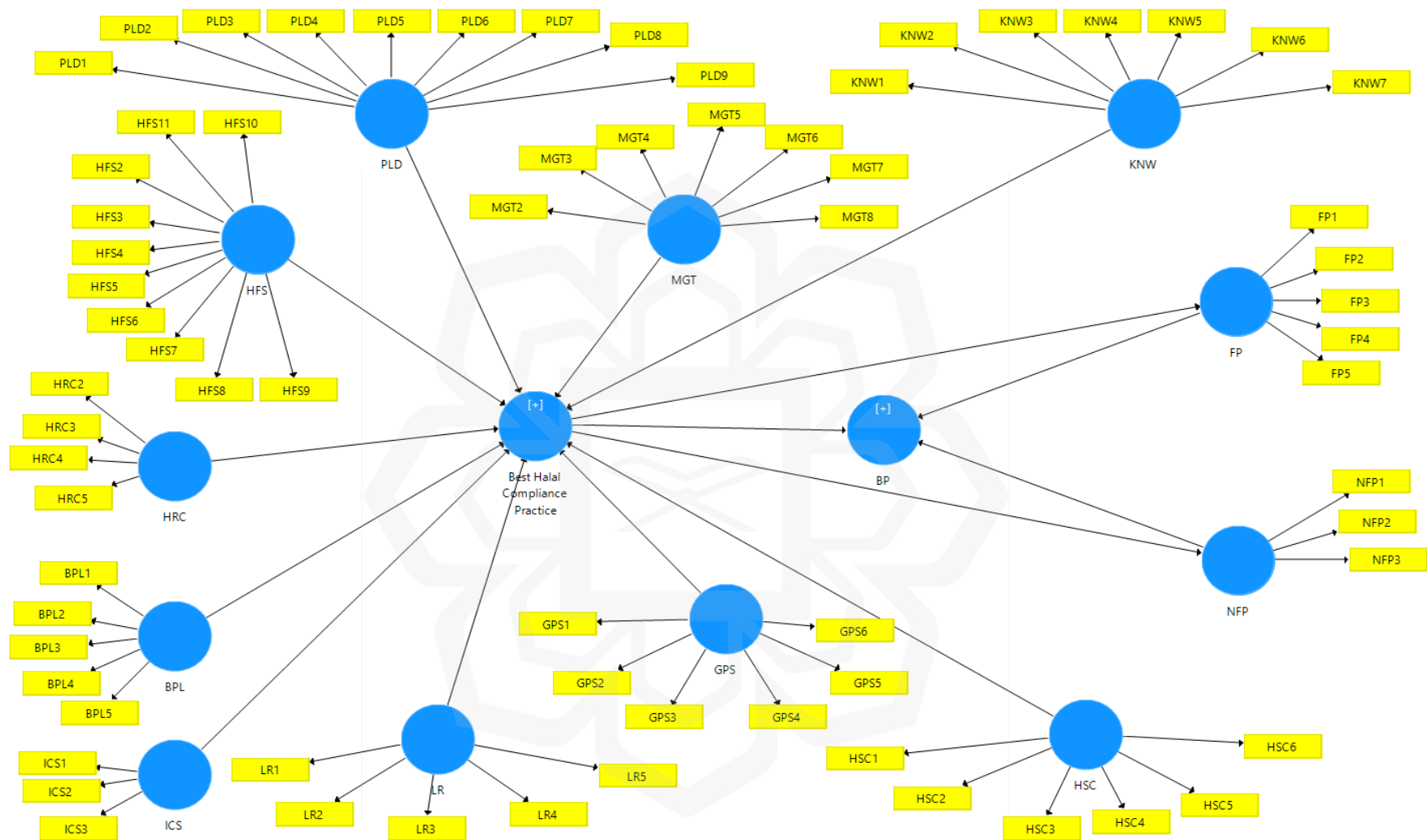


Figure 5. 6 Measurement model

### 5.6.1.1 Factor loadings

Factor loadings help to realise how effectively the items represent the underlying construct. As a part of measurement model evaluation, seven items (KNW8, MGT1, HFS1, HRC1, LR6, NFP4 and NFP5) were removed from the analysis because of low factor loadings ( $<0.50$ ) (Arifin and Yusoff, 2016; Gefen and Straub, 2005).

Results show that all the loadings ranged from 0.532 to less than 0.93. All ten components of HCR and two components of business performance (BP) were kept and carried forward for further analysis of SEM. The 10 HCR components form the latent variable “BPHCR” with a  $R^2$  value of 0.943 that explains 94.3% of the variance. A total of 70 indicator items constructed the components in the model with a factor loading of  $>0.50$  for each item (Table 5.20).

Table 5. 20 Outer loadings

| Constructs  | Loadings | Standard Deviation (STDEV) | T Statistics |
|-------------|----------|----------------------------|--------------|
| KNW1 <- KNW | 0.534    | 0.056                      | 9.617        |
| KNW2 <- KNW | 0.647    | 0.045                      | 14.436       |
| KNW3 <- KNW | 0.583    | 0.044                      | 13.183       |
| KNW4 <- KNW | 0.628    | 0.047                      | 13.418       |
| KNW5 <- KNW | 0.850    | 0.018                      | 47.459       |
| KNW6 <- KNW | 0.839    | 0.016                      | 51.002       |
| KNW7 <- KNW | 0.774    | 0.029                      | 26.692       |
|             |          |                            |              |
| MGT2 <- MGT | 0.712    | 0.038                      | 18.889       |
| MGT3 <- MGT | 0.695    | 0.042                      | 16.544       |
| MGT4 <- MGT | 0.67     | 0.036                      | 18.661       |
| MGT5 <- MGT | 0.738    | 0.038                      | 19.206       |
| MGT6 <- MGT | 0.555    | 0.055                      | 10.165       |
| MGT7 <- MGT | 0.779    | 0.031                      | 25.233       |

|              |       |       |        |
|--------------|-------|-------|--------|
| MGT8 <- MGT  | 0.794 | 0.025 | 31.788 |
|              |       |       |        |
| PLD1 <- PLD  | 0.7   | 0.033 | 21.116 |
| PLD2 <- PLD  | 0.692 | 0.032 | 21.82  |
| PLD3 <- PLD  | 0.76  | 0.028 | 27.119 |
| PLD4 <- PLD  | 0.73  | 0.034 | 21.531 |
| PLD5 <- PLD  | 0.567 | 0.075 | 7.61   |
| PLD6 <- PLD  | 0.725 | 0.032 | 22.669 |
| PLD7 <- PLD  | 0.747 | 0.027 | 27.643 |
| PLD8 <- PLD  | 0.695 | 0.035 | 19.991 |
| PLD9 <- PLD  | 0.747 | 0.03  | 24.646 |
|              |       |       |        |
| HFS10 <- HFS | 0.776 | 0.028 | 27.813 |
| HFS11 <- HFS | 0.666 | 0.052 | 12.779 |
| HFS2 <- HFS  | 0.724 | 0.031 | 23.193 |
| HFS3 <- HFS  | 0.697 | 0.035 | 20.075 |
| HFS4 <- HFS  | 0.684 | 0.047 | 14.607 |
| HFS5 <- HFS  | 0.664 | 0.034 | 19.399 |
| HFS6 <- HFS  | 0.732 | 0.029 | 25.01  |
| HFS7 <- HFS  | 0.812 | 0.024 | 33.551 |
| HFS8 <- HFS  | 0.857 | 0.018 | 48.476 |
| HFS9 <- HFS  | 0.798 | 0.035 | 22.503 |
|              |       |       |        |
| HRC2 <- HRC  | 0.589 | 0.05  | 11.901 |
| HRC3 <- HRC  | 0.869 | 0.014 | 63.033 |
| HRC4 <- HRC  | 0.87  | 0.016 | 53.507 |
| HRC5 <- HRC  | 0.815 | 0.021 | 39.073 |
|              |       |       |        |
| BPL1 <- BPL  | 0.816 | 0.024 | 33.875 |
| BPL2 <- BPL  | 0.672 | 0.038 | 17.458 |
| BPL3 <- BPL  | 0.829 | 0.02  | 40.833 |

|             |       |       |        |
|-------------|-------|-------|--------|
| BPL4 <- BPL | 0.814 | 0.02  | 41.414 |
| BPL5 <- BPL | 0.806 | 0.03  | 27.205 |
|             |       |       |        |
| ICS1 <- ICS | 0.532 | 0.068 | 7.863  |
| ICS2 <- ICS | 0.811 | 0.03  | 26.758 |
| ICS3 <- ICS | 0.83  | 0.022 | 37.539 |
|             |       |       |        |
| LR1 <- LR   | 0.733 | 0.031 | 23.549 |
| LR2 <- LR   | 0.798 | 0.021 | 37.409 |
| LR3 <- LR   | 0.667 | 0.05  | 13.246 |
| LR5 <- LR   | 0.879 | 0.016 | 54.781 |
|             |       |       |        |
| GPS1 <- GPS | 0.799 | 0.028 | 28.363 |
| GPS2 <- GPS | 0.751 | 0.036 | 20.987 |
| GPS3 <- GPS | 0.803 | 0.023 | 34.325 |
| GPS4 <- GPS | 0.633 | 0.045 | 13.972 |
| GPS5 <- GPS | 0.69  | 0.044 | 15.848 |
| GPS6 <- GPS | 0.727 | 0.037 | 19.822 |
|             |       |       |        |
| HSC1 <- HSC | 0.758 | 0.025 | 30.132 |
| HSC2 <- HSC | 0.814 | 0.021 | 39.298 |
| HSC3 <- HSC | 0.807 | 0.023 | 35.113 |
| HSC4 <- HSC | 0.775 | 0.031 | 24.868 |
| HSC5 <- HSC | 0.858 | 0.015 | 56.809 |
| HSC6 <- HSC | 0.741 | 0.031 | 23.679 |
|             |       |       |        |
| FP1 <- FP   | 0.901 | 0.011 | 81.649 |
| FP2 <- FP   | 0.915 | 0.011 | 86.685 |
| FP3 <- FP   | 0.915 | 0.01  | 89.222 |
| FP4 <- FP   | 0.93  | 0.008 | 117.61 |
| FP5 <- FP   | 0.913 | 0.01  | 88.121 |

| NFP1 <- NFP | 0.895 | 0.014 | 63.836 |
|-------------|-------|-------|--------|
| NFP2 <- NFP | 0.818 | 0.025 | 32.372 |
| NFP3 <- NFP | 0.903 | 0.009 | 97.01  |

#### **5.6.1.2 Multicollinearity test**

High intercorrelations between two or more independent variables in a multiple regression model are referred to as multicollinearity. When a researcher or analyst tries to figure out how well each independent variable can be utilised to predict or comprehend the dependent variable in a statistical model, multicollinearity may result in skewed or misleading conclusions (Edeh et al., 2022). When independent variables in a regression model are correlated, multicollinearity emerges. If a pair of variables have a correlation coefficient of  $\pm 1.0$ , they are said to be completely collinear. Less trustworthy statistical judgments will be the outcome of multicollinearity among independent variables. When creating multiple regression models that include two or more variables, it is preferable to employ independent variables that are neither repetitive nor associated.

In regression analysis, the level of multicollinearity may be measured using a variable known as a variance inflation factor (VIF). VIF has been used to assess multicollinearity in the current research. When there is a connection between many independent variables in a multiple regression model, a phenomenon known as multicollinearity is said to occur. This might have a negative impact on the findings of the regression. As a result, the VIF is able to provide an estimate of the degree to which the variance of a regression coefficient is inflated as a result of multicollinearity. A high VIF on an independent variable shows that it has a strongly collinear connection to the other variables, which is something that should be accounted for or taken into consideration while designing the structure of the model and choosing which variables will be independent.

According to Akinwande et al. (2015), when the VIF is 1, there is no multicollinearity among the regressors; however, when the VIF is more than 1, the regressors may be moderately correlated with one another. A significant correlation that might cause problems is indicated by a VIF between 5 and 10. In addition, if the VIF is more than 10, it is safe to conclude that the regression coefficients are inaccurately calculated as a result of multicollinearity, which calls for appropriate action to be taken. Similarly, O'brien (2005) reported that the usage of a VIF of 10 or even one as low as 4 (corresponding to a tolerance threshold of 0.10 or 0.25) as rules of thumb to signify severe or substantial multi-collinearity is not widespread at all. On the contrary, Hair et al. (2020) stated that if the VIF is 3.0 or below, then there is a low probability that multicollinearity will be an issue. Although it was stated in earlier papers that a VIF level of 5.0 was considered to be the appropriate range, more recent studies have shown that this value is really too high. When the correlations between indicators are 5.0 or greater, this is a sign that the levels of multicollinearity are too high, which may cause difficulties in the future.

Table 5.21 presents VIF values found from the multicollinearity test using SmartPLS. The output shows that all the VIFs are less than 5.0 where most of the values are below or around 3.0. Such output confirms that the construct model in this research is free from multicollinearity issues. All the 70 indicator items are independent to each other and are not highly correlated.

Table 5. 21 Collinearity Statistics (VIF)

| No. | Items | VIF  | No. | Items | VIF  | No. | Items | VIF  |
|-----|-------|------|-----|-------|------|-----|-------|------|
| 1.  | BPL1  | 2.01 | 25. | HFS8  | 3.24 | 49. | LR3   | 2.78 |
| 2.  | BPL2  | 1.39 | 26. | HFS9  | 2.36 | 50. | LR4   | 2.62 |
| 3.  | BPL3  | 2.26 | 27. | HRC2  | 1.19 | 51. | LR5   | 2.26 |
| 4.  | BPL4  | 2.12 | 28. | HRC3  | 2.22 | 52. | MGT2  | 1.70 |
| 5.  | BPL5  | 1.91 | 29. | HRC4  | 2.42 | 53. | MGT3  | 1.58 |
| 6.  | FP1   | 3.68 | 30. | HRC5  | 1.83 | 54. | MGT4  | 1.62 |

|     |       |      |     |      |      |     |      |      |
|-----|-------|------|-----|------|------|-----|------|------|
| 7.  | FP2   | 4.18 | 31. | HSC1 | 1.99 | 55. | MGT5 | 1.80 |
| 8.  | FP3   | 4.13 | 32. | HSC2 | 2.34 | 56. | MGT6 | 1.31 |
| 9.  | FP4   | 4.03 | 33. | HSC3 | 2.18 | 57. | MGT7 | 2.15 |
| 10. | FP5   | 3.98 | 34. | HSC4 | 2.84 | 58. | MGT8 | 2.15 |
| 11. | GPS1  | 2.56 | 35. | HSC5 | 3.63 | 59. | NFP1 | 3.04 |
| 12. | GPS2  | 2.65 | 36. | HSC6 | 1.87 | 60. | NFP2 | 1.52 |
| 13. | GPS3  | 2.05 | 37. | ICS1 | 1.09 | 61. | NFP3 | 3.13 |
| 14. | GPS4  | 1.44 | 38. | ICS2 | 1.40 | 62. | PLD1 | 2.55 |
| 15. | GPS5  | 2.00 | 39. | ICS3 | 1.31 | 63. | PLD2 | 2.46 |
| 16. | GPS6  | 2.09 | 40. | KNW1 | 1.66 | 64. | PLD3 | 2.01 |
| 17. | HFS10 | 2.31 | 41. | KNW2 | 2.01 | 65. | PLD4 | 1.73 |
| 18. | HFS11 | 1.76 | 42. | KNW3 | 1.76 | 66. | PLD5 | 1.45 |
| 19. | HFS2  | 2.25 | 43. | KNW4 | 1.57 | 67. | PLD6 | 1.98 |
| 20. | HFS3  | 1.91 | 44. | KNW5 | 2.54 | 68. | PLD7 | 1.96 |
| 21. | HFS4  | 1.75 | 45. | KNW6 | 2.50 | 69. | PLD8 | 1.69 |
| 22. | HFS5  | 1.68 | 46. | KNW7 | 2.16 | 70. | PLD9 | 1.97 |
| 23. | HFS6  | 2.01 | 47. | LR1  | 1.37 |     |      |      |
| 24. | HFS7  | 2.39 | 48. | LR2  | 1.75 |     |      |      |

#### 5.6.1.3 Reliability analysis

In statistical analysis, ‘reliability’ refers to the degree to which a scale generates the same findings regardless of the number of times that the measurements are carried out. The investigation of reliability is referred to as reliability analysis. In the reliability analysis, when the association is strong, the scale produces consistent findings and is thus dependable (Khare et al., 2019). The two most commonly used methods for establishing reliability include Cronbach Alpha and Composite Reliability.

Both of the reliability requirements need to have a value that is more than 0.70 as a rule of thumb (Imtiyaz et al., 2022; Khare et al., 2019; Rahayu et al., 2022). Table



5.22 presents the Cronbach's Alpha values found from the analysis in this research. All the values are above the threshold value 0.70 except for one component, ICS. However, the P values are significant for all variables.

Table 5. 22 Reliability statistics (Cronbach's Alpha and CR)

|     | Cronbach's Alpha | Composite Reliability (CR) | P Value | T Statistics |
|-----|------------------|----------------------------|---------|--------------|
| BPL | 0.85             | 0.89                       | 0.00    | 51.18        |
| FP  | 0.95             | 0.96                       | 0.00    | 199.05       |
| GPS | 0.83             | 0.88                       | 0.00    | 44.67        |
| HFS | 0.91             | 0.93                       | 0.00    | 101.80       |
| HRC | 0.80             | 0.87                       | 0.00    | 37.69        |
| HSC | 0.88             | 0.91                       | 0.00    | 70.70        |
| ICS | 0.57             | 0.78                       | 0.00    | 13.48        |
| KNW | 0.84             | 0.87                       | 0.00    | 61.57        |
| LR  | 0.81             | 0.87                       | 0.00    | 39.39        |
| MGT | 0.83             | 0.88                       | 0.00    | 48.03        |
| NFP | 0.84             | 0.91                       | 0.00    | 46.66        |
| PLD | 0.88             | 0.90                       | 0.00    | 69.61        |

Simultaneously, the second criteria of reliability, Composite reliability (CR), which is weighted, is more accurate than Cronbach alpha (which is unweighted) due to the fact that individual indicators have varying degrees of dependability (Khare et al., 2019). Hence, from Table 5.22, it can be observed that all values range from 0.8 to 0.9 which is more than the threshold value 0.70. Additionally, the P values indicate the significance of the reliability test. Results from both Cronbach's alpha, and CR statistic provide a confirmation that each of the items constantly and accurately measures the construct that they are supposed to be measuring.

### 5.6.2 Construct validity

A construct is an abstract notion, an underlying theme, or a subject matter that one desires to evaluate using survey questions. A construct is often referred to in the context of survey research. The degree to which valid inferences may be drawn from the

operationalizations in research to the theoretical conceptions on which those operationalizations were founded is referred to as the construct validity of that research. Construct validity, much like external validity, is connected to the concept of generalising. The amount to which the measures that are utilised, which are often questionnaires, really test the hypothesis or theory that they are assessing is referred to as construct validity. The results of a given test should be able to reliably predict the theoretical concept in order to establish the construct validity of the research (Lavrakas, 2013a). Convergent validity and discriminant validity are the two subsets of construct validity. Statistically using PLS-SEM, construct validity is established when there is convergent validity and discriminant validity.

#### **5.6.2.1 Convergent validity**

The concept of convergent validity describes the degree to which a new scale is connected to both other variables and other measurements of the same construct (Krabbe, 2017). The Average Variance Extracted (AVE) value is observed to establish convergent validity. A construct's AVE is the ratio of the variation explained by the construct to the variance explained by measurement error. It is strongly advised that an AVE of at least 0.50 be achieved, both as a rule of thumb and for appropriate convergence (Al-Okaily et al., 2020; Barnett and Sergi, 2022; Nasution et al., 2020). Table 5.23 shows the AVE values for all variables. Convergent validity is shown by the fact that all variables have AVE values greater than or at least 0.50.

Table 5. 23 Construct convergent validity: Average Variance Extracted (AVE)

|     | Average Variance Extracted (AVE) | P Value |
|-----|----------------------------------|---------|
| BPL | 0.62                             | 0.00    |
| FP  | 0.84                             | 0.00    |
| GPS | 0.54                             | 0.00    |
| HFS | 0.55                             | 0.00    |
| HRC | 0.63                             | 0.00    |
| HSC | 0.63                             | 0.00    |
| ICS | 0.54                             | 0.00    |

|     |      |      |
|-----|------|------|
| KNW | 0.50 | 0.00 |
| LR  | 0.56 | 0.00 |
| MGT | 0.50 | 0.00 |
| NFP | 0.76 | 0.00 |
| PLD | 0.50 | 0.00 |

### 5.6.2.2 Discriminant validity

Not only should the construct correlate with variables that are connected to it, but it also should not correlate with variables that are different from it and not linked to it. A conclusion or measurement of this kind is called a discriminant validity determination (Krabbe, 2017). The square root of the AVE for each construct is compared to the construct's association with other variables in order to determine whether or not the discriminant validity of the construct can be established. In such comparison the square root of the AVE should be greater to establish the discriminant validity of the construct (AlNuaimi et al., 2021). In order to examine connections between latent variables, discriminant validity testing has become standard practise. For discriminant validity in variance-based structural equation modelling, such as partial least squares, the Fornell-Larcker criteria and the heterotrait-monotrait (HTMT) ratio are the most used methodologies (Henseler et al., 2015). To validate the measurement model in this research, both criteria have been considered.

According to Fornell and Larcker criterion, the square root of the AVE that is retrieved by a construct has to be higher than the correlation that exists between the construct in question and any other construct in order establish the discriminant validity (Anderson and Gerbing, 1988; Green et al., 2011; Hilkenmeier et al., 2020; Messick, 1995; Shiu et al., 2011). Table 5.24 presents the findings for Fornell and Larcker criterion. It can be observed that the off-diagonal correlation coefficients for each construct in relevant rows and columns are lower than the square roots of the AVEs in the diagonal. Although there are few disputes, the differences are too small that can be ignored (Ab Hamid et al., 2017). Moreover, this dispute has been diluted by the second criterion, HTMT ratio.

Table 5. 24 Fornell and Larcker Criterion

|     | BPL         | FP         | GPS         | HFS         | HRC         | HSC         | ICS         | KNW         | LR          | MGT         | NFP        | PLD         |
|-----|-------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------------|
| BPL | <b>0.85</b> |            |             |             |             |             |             |             |             |             |            |             |
| FP  | 0.0         | <b>0.9</b> |             |             |             |             |             |             |             |             |            |             |
| GPS | 0.7         | 0.0        | <b>0.78</b> |             |             |             |             |             |             |             |            |             |
| HFS | 0.8         | 0.1        | 0.7         | <b>0.75</b> |             |             |             |             |             |             |            |             |
| HRC | 0.7         | 0.0        | 0.7         | 0.7         | <b>0.83</b> |             |             |             |             |             |            |             |
| HSC | 0.8         | 0.0        | 0.75        | 0.7         | 0.7         | <b>0.85</b> |             |             |             |             |            |             |
| ICS | 0.5         | 0.3        | 0.7         | 0.7         | 0.6         | 0.6         | <b>0.75</b> |             |             |             |            |             |
| KNW | 0.5         | 0.1        | 0.4         | 0.5         | 0.5         | 0.5         | 0.5         | <b>0.73</b> |             |             |            |             |
| LR  | 0.7         | 0.0        | 0.6         | 0.7         | 0.6         | 0.7         | 0.6         | 0.3         | <b>0.83</b> |             |            |             |
| MGT | 0.6         | 0.1        | 0.6         | 0.6         | 0.7         | 0.6         | 0.5         | 0.4         | 0.7         | <b>0.74</b> |            |             |
| NFP | -0.1        | 0.6        | -0.1        | -0.1        | -0.2        | -0.1        | 0.1         | 0.0         | -0.1        | -0.1        | <b>0.9</b> |             |
| PLD | 0.6         | 0.1        | 0.7         | 0.7         | 0.8         | 0.7         | 0.6         | 0.5         | 0.6         | 0.7         | -0.1       | <b>0.78</b> |

Another criterion has been used by the scholars which is heterotrait-monotrait (HTMT) ratio, in recent times. HTMT is comparing the average of the heterotrait-heteromethod correlations (i.e., the correlations of indicators across constructs measuring the same phenomenon) to the average of the heterotrait-heteromethod correlations (HTMT) (i.e., the correlations of indicators within the same construct). A threshold of 0.85 has been proposed by some writers, while 0.90 has been suggested by others (Anderson and Gerbing, 1988; Green et al., 2011; Hilkenmeier et al., 2020; Messick, 1995; Shiu et al., 2011). This research uses a threshold level of 0.90. The findings of HTMT ratio presented in Table 5.25 shows that none of the values are above 0.90 which establishes the discriminant validity of the constructs used in this research.

Table 5. 25 Heterotrait-Monotrait (HTMT) ratio (Lower order construct)

|     | BPL  | FP  | GPS | HFS  | HRC | HSC | ICS | KNW | LR  | MGT | NFP |
|-----|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| BPL |      |     |     |      |     |     |     |     |     |     |     |
| FP  | 0.0  |     |     |      |     |     |     |     |     |     |     |
| GPS | 0.8  | 0.1 |     |      |     |     |     |     |     |     |     |
| HFS | 0.88 | 0.1 | 0.8 |      |     |     |     |     |     |     |     |
| HRC | 0.86 | 0.0 | 0.9 | 0.8  |     |     |     |     |     |     |     |
| HSC | 0.85 | 0.0 | 0.9 | 0.8  | 0.8 |     |     |     |     |     |     |
| ICS | 0.7  | 0.4 | 0.9 | 0.87 | 0.8 | 0.8 |     |     |     |     |     |
| KNW | 0.5  | 0.1 | 0.5 | 0.5  | 0.5 | 0.6 | 0.6 |     |     |     |     |
| LR  | 0.8  | 0.0 | 0.7 | 0.86 | 0.7 | 0.8 | 0.7 | 0.4 |     |     |     |
| MGT | 0.7  | 0.1 | 0.7 | 0.7  | 0.8 | 0.7 | 0.7 | 0.5 | 0.8 |     |     |
| NFP | 0.2  | 0.7 | 0.2 | 0.1  | 0.2 | 0.2 | 0.4 | 0.1 | 0.1 | 0.1 |     |
| PLD | 0.87 | 0.1 | 0.8 | 0.8  | 1.0 | 0.8 | 0.8 | 0.5 | 0.7 | 0.8 | 0.2 |

### 5.6.3 Validating higher order construct (HOC)

Higher-order constructs, or hierarchical component models (HCM) in the context of PLS-SEM, provide a framework for modelling a construct on both its more abstract dimension (the higher-order component) and its more concrete subdimensions (referred to as lower-order components). HCM is a broader concept since it evaluates several components all at once at a more abstract level (dimensions). Consequently, HCM encompass tangible characteristics of an abstract conceptual variable of interest by identifying lower-order components (Sarstedt et al., 2019).

The type of model that has been adopted in this research is reflective-formative type of latent variable model. For such model, the most common methodologies recommended by scholars (Becker et al., 2022; Hair et al., 2017; Sarstedt et al., 2019) and used to validate HOC in a research include collinearity check (VIF), reliability

(Cronbach's alpha and Composite reliability) and AVE test, and discriminant validity test using HTMT ratio.

#### 5.6.3.1 Loadings and Collinearity (VIF)- HOC

To check the collinearity issue, VIF has been observed for each construct at higher level. As suggested by research scholars and previous studies (O'brien, 2005; Hair et al., 2020; Barnett and Sergi, 2022), it was checked if any of the VIF values were to equal or above 5.0. Table 5.26 shows that all VIF values are below 4.0 except for BPL which is 4.052. However, the value is still below 5.0 and can be considered to have poor collinearity issue (Becker et al., 2012). Hence, it was concluded that there is no collinearity issue at HOC and the research could proceed for further analysis.

Table 5. 26 HOC outer loadings and VIF

| HOC   | First-order construct | Outer Loadings | T Statistics | P Values | VIF   |
|-------|-----------------------|----------------|--------------|----------|-------|
| BPHCR | KNW                   | 0.27           | 1.903        | 0.057    | 1.668 |
|       | MGT                   | 0.354          | 2.209        | 0.027    | 2.31  |
|       | PLD                   | 0.422          | 2.321        | 0.02     | 3.917 |
|       | HFS                   | 0.33           | 2.435        | 0.015    | 3.865 |
|       | BPL                   | 0.532          | 2.032        | 0.042    | 4.052 |
|       | HRC                   | 0.831          | 2.483        | 0.013    | 3.702 |
|       | GPS                   | 0.47           | 2.289        | 0.022    | 3.599 |
|       | LR                    | 0.384          | 1.946        | 0.052    | 2.797 |
|       | ICS                   | 0.196          | 0.529        | 0.597    | 2.239 |
|       | HSC                   | 0.466          | 2.208        | 0.027    | 4.047 |

### 5.6.3.2 Reliability and Validity- HOC

The statical findings of reliability and validity analysis are presented in Table 5.27. Reliability at HOC was evaluated by looking at composite reliability (CR) and Cronbach's alpha value for each construct. The minimum threshold value in both cases were 0.70 (Imtiyaz et al., 2022; Khare et al., 2019; Rahayu et al., 2022). It can be observed that all values are above 0.70 except for BPHCR-ICS construct with Cronbach's alpha 0.57. However, the P-value of ICS (0.026) for both CR and Cronbach's alpha are significant indicating that there is only a 2.6% chance that the Cronbach's alpha and CR value are due to random error. It is due to few indicator items under ICS component which is less than five. In such case, according to Hinton et al. (2014), a Cronbach's alpha value less than 0.5 and above can be accepted indicating a moderate level of consistency. All other 9 constructs show a Cronbach's alpha value above 0.70 indicating a high-level consistency for the scale used in the research model. Similarly, the CR results show a value which is above 0.70 for all constructs except BPHCR-ICS construct which is 0.613 with a significant P value. According to Fornell and Larcker (1981) and Hair (2014) a minimum of 0.6 is accepted to establish CR.

Additionally, results show an AVE of above 0.5 for all construct except for BPHCR-ICS. However, an AVE less than 0.5 is accepted if the CR is equal or more than 0.6 (Fornell and Larcker, 1981a, 1981b; Hair, 2014; Lam, 2012). Hence, it can be concluded that, both reliability and validity of the present research model has been established. The next step is to check discriminant validity.

Table 5. 27 Reliability and validity statistics at HOC

| HOC   | First-order construct | AVE   | CR    | Cronbach's Alpha | P value |
|-------|-----------------------|-------|-------|------------------|---------|
| BPHCR | KNW                   | 0.569 | 0.769 | 0.836            | 0       |
|       | MGT                   | 0.588 | 0.866 | 0.833            | 0       |
|       | PLD                   | 0.597 | 0.898 | 0.875            | 0       |
|       | HFS                   | 0.526 | 0.916 | 0.909            | 0       |

|  |     |       |       |       |       |
|--|-----|-------|-------|-------|-------|
|  | BPL | 0.619 | 0.889 | 0.847 | 0     |
|  | HRC | 0.631 | 0.869 | 0.796 | 0     |
|  | GPS | 0.528 | 0.868 | 0.83  | 0     |
|  | LR  | 0.521 | 0.84  | 0.812 | 0     |
|  | ICS | 0.461 | 0.613 | 0.57  | 0.026 |
|  | HSC | 0.626 | 0.909 | 0.881 | 0     |

### 5.6.3.3 Discriminant validity- HOC

The heterotrait-monotrait ratio (HTMT) was selected as the criterion by which discriminant validity was evaluated. A threshold value of 0.90 (Anderson and Gerbing, 1988; Green et al., 2011; Hilkenmeier et al., 2020; Messick, 1995; Shiu et al., 2011) of HTMT ratio was used to retain a construct. The analysis findings are presented in Table 5.28. It has been shown that a threshold HTMT ratio of 0.9 is present in a few numbers of constructs (FP→BP; NFP→BP; HFS→BPL; HRC→BPL; HSC→BPL; PLD→BPL; HRC→GPS; HSC→GPS; ICS→GPS; ICS→HFS; PLD→HRC; and ICS→HSC), while the majority of the constructions fall below 0.9. However, not a single one of the constructs was seen surpassing the maximum threshold value of the HTMT ratio. Hence, the discriminant validity of measurement model at HOC had been established.



Table 5. 28 Heterotrait-Monotrait (HTMT) ratio at HOC

|     | BP  | BPL  | FP   | GPS | HFS | HRC | HSC | ICS | KNW | LR  | MGT | NFP | PLD |
|-----|-----|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| BP  |     |      |      |     |     |     |     |     |     |     |     |     |     |
| BPL | 0.1 |      |      |     |     |     |     |     |     |     |     |     |     |
| FP  | 0.9 | 0.02 |      |     |     |     |     |     |     |     |     |     |     |
| GPS | 0.1 | 0.8  | 0.1  |     |     |     |     |     |     |     |     |     |     |
| HFS | 0.1 | 0.9  | 0.1  | 0.8 |     |     |     |     |     |     |     |     |     |
| HRC | 0.1 | 0.9  | 0.03 | 0.9 | 0.8 |     |     |     |     |     |     |     |     |
| HSC | 0.1 | 0.9  | 0.1  | 0.9 | 0.8 | 0.8 |     |     |     |     |     |     |     |
| ICS | 0.4 | 0.7  | 0.4  | 0.9 | 0.9 | 0.8 | 0.9 |     |     |     |     |     |     |
| KNW | 0.1 | 0.6  | 0.1  | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 |     |     |     |     |     |
| LR  | 0.1 | 0.8  | 0.03 | 0.7 | 0.8 | 0.7 | 0.8 | 0.7 | 0.4 |     |     |     |     |
| MGT | 0.1 | 0.7  | 0.1  | 0.7 | 0.7 | 0.8 | 0.7 | 0.7 | 0.5 | 0.8 |     |     |     |
| NFP | 0.9 | 0.2  | 0.7  | 0.2 | 0.1 | 0.2 | 0.2 | 0.4 | 0.1 | 0.1 | 0.2 |     |     |
| PLD | 0.1 | 0.9  | 0.1  | 0.8 | 0.8 | 0.9 | 0.8 | 0.8 | 0.5 | 0.7 | 0.8 | 0.2 |     |

## 5.7 ASSESSMENT OF STRUCTURAL MODEL

Evaluation of potential collinearity among predictor constructs in structural model regressions is the first step in PLS-structural SEM's model assessment (Hair et al., 2021). This is to confirm that the model estimates are not impacted by large levels of collinearity by inspection of VIF values. Next, the significance and relevance of the path coefficients ( $\beta$ ) are assessed. Testing the significance of the path coefficients involves using the bootstrapping method and inspecting t-values or bootstrapping confidence intervals and effect size ( $F^2$ ). Additionally, coefficient of determination ( $R^2$ ), predictive relevance ( $Q^2$ ) and standardised residual mean residual (SRMR) are used to evaluate a model's ability to explain data (Hair et al., 2021). Figure 5.7 illustrates the predicted association between latent variables in the study's research model.

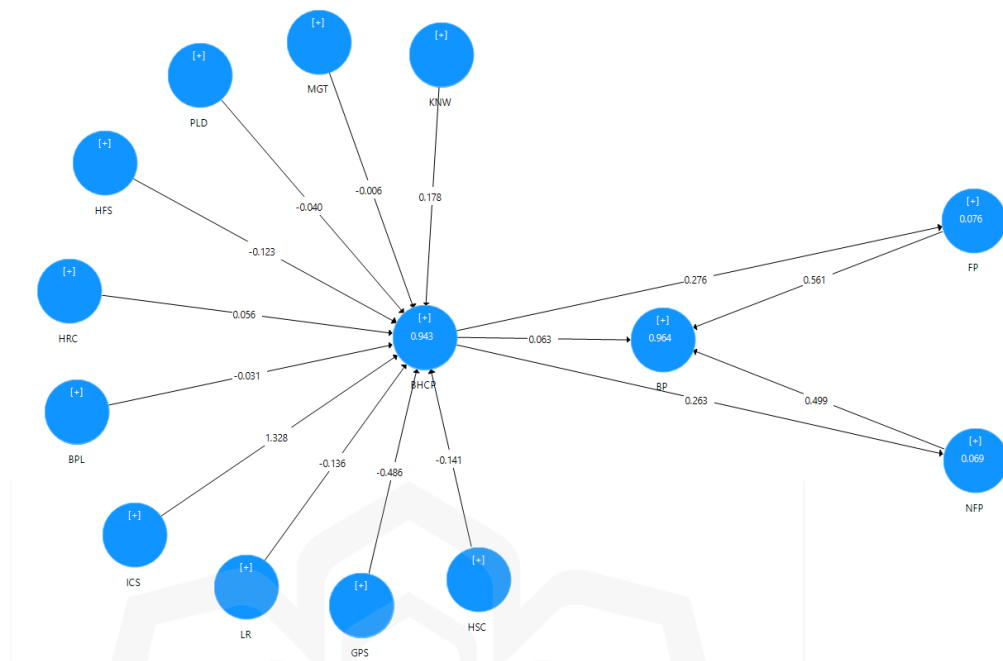


Figure 5. 7 Structural model of the research

### 5.7.1 Collinearity test

Through the process of estimating a number of regression equations, the coefficients of the structural model that describe the relationships between constructs may be obtained. The point estimates and standard errors need to be checked for collinearity concerns in the structural model regressions. This is because significant correlations between each set of predictor constructs have the potential to introduce bias into the point estimates and standard errors (Sarstedt and Mooi, 2019). Hence, as the first step of assessing structural model, collinearity is analysed to see whether or not there is any connection between two or more constructs. According to the Table 5.29, the absence of a collinearity problem is indicated by a value of variance inflation factor (VIF) that is less than 5.0 (J. Hair et al., 2017; Hair et al., 2021) in the current research model.

Table 5. 29 Inner VIF values

| No. | Inner Constructs | VIF   |
|-----|------------------|-------|
| 1.  | KNW              | 1.376 |
| 2.  | MGT              | 1.629 |
| 3.  | PLD              | 2.620 |
| 4.  | HFS              | 2.759 |
| 5.  | HRC              | 1.437 |
| 6.  | BPL              | 1.763 |
| 7.  | ICS              | 2.265 |
| 8.  | LR               | 3.155 |
| 9.  | GPS              | 2.745 |
| 10. | HSC              | 3.072 |
| 11. | BPHCR*FP         | 1.000 |
| 12. | BPHCR*NFP        | 1.000 |
| 13. | BPHCR*BP         | 1.097 |
| 14. | FP*BP            | 1.734 |
| 15. | NFP*BP           | 1.721 |

### 5.7.2 Path Coefficient

Next, in SEM, hypothesised associations are tested for significance. Using this framework, we can forecast future directions for our study. By putting each path in the research model to the test, the path coefficient may be used to describe the strength of the connection. Every possible path between two latent variables in the structural model indicates the existence of the predicted connection between them. The examination is to evaluate if it is statistically significant or otherwise, that is whether it supports or refutes the hypothesis. Hair et al. (2013) and Urbach and Ahlemann (2010) suggest considering the algebraic sign, size, and significance when assessing the value of the path coefficient between structural model components. It is common practise to use magnitude to denote the intensity of the link between any two constructs, whereas path

coefficients typically vary from -1 to +1, signifying a negative or positive association. Following Hair et al. (2014) recommendation, we used a bootstrapping process with a resample size of 5000 to evaluate the hypotheses we generated.

The statistical evidence required to draw the conclusion that a particular path coefficient is significant consists of a T-statistic that is larger than 1.96 and a P-value that is lower than 0.05 (Briones et al., 2018; Edeh et al., 2022; Falk and Miller, 1992; Hair et al., 2017; Hair et al., 2012; Imtiyaz et al., 2022; Usman et al., 2021). According to hypothesis of Hair et al. (2017), a minimum route coefficient of 0.100 is required to account for a model impact. Cohen (2010), on the other hand, proposed using these values: 0.02 for weak, 0.15 for moderate, and 0.35 for strong, when trying to determine the magnitude of the path coefficient.

Statistical findings on the significance and relevance of the path coefficients, T-statistics, and P-values are presented in Table 5.30. The first column presents the 13 hypothesised paths to be tested followed by the second column showing the beta coefficient ( $\beta$ ) in each row for respective paths. A positive  $\beta$ -value indicates a positive impact within the construct, on the other hand, a negative  $\beta$ -value indicates the presence of a negative impact or relationship within the construct (Usman et al., 2021). Standard deviations are presented in third column. The 4<sup>th</sup> and 5<sup>th</sup> column show the T-statistic and P-value respectively indicating whether the path coefficient is significant or not. Additionally, the 6<sup>th</sup> and 7<sup>th</sup> columns show the path coefficient at confidence interval of 2.5 percent and 97.5 percent respectively. Finally, path magnitude has been remarked in last column.

Table 5.30 presents the findings of this analysis, which reveals that thirteen hypotheses were put forth for consideration. The estimated values of the path coefficient varied from 0.000 to 0.238, which indicates that the predicted constructs have both weak and moderate associations with one another. The data also reveals that the significant levels exist, since the T-statistics values varied from 0.008 to 15.826. This can be realised by looking at the Table 5.30. Eleven of the hypotheses have reached the necessary level of probability (P-value), which is less than 0.05 (T-statistics greater than 1.96). There were just two relationships (HRC->BPHCR and BPHCR->NFP) that have

been considered to be non-significant as both T-statistic and P-value did not meet the required level. Moreover, all the path coefficient values were positive indicating a positive association between the variables except for the HRC->BPHCR construct which had a negative  $\beta$  value, -0.015. Although HRC shows a negative impact on BPHCR, the impact was non-significant (T-statistic= 0.924, and P-value= 0.355).

Table 5. 30 Path coefficient statistic

| Paths<br>(1) | $\beta$<br>(2) | St.<br>Dev<br>(3) | T<br>Statistic<br>(4) | P<br>Values<br>(5) | 2.5<br>%<br>(6) | 97.5<br>%<br>(7) | Path<br>magnitud<br>e<br>(8) |
|--------------|----------------|-------------------|-----------------------|--------------------|-----------------|------------------|------------------------------|
| KNW -> BPHCR | 0.234          | 0.015             | 15.826                | 0.000              | 0.21            | 0.27             | Moderate                     |
| MGT -> BPHCR | 0.184          | 0.015             | 12.651                | 0.000              | 0.15            | 0.21             | Moderate                     |
| PLD -> BPHCR | 0.108          | 0.017             | 6.255                 | 0.000              | 0.07            | 0.14             | Weak                         |
| HFS -> BPHCR | 0.223          | 0.017             | 13.099                | 0.000              | 0.18            | 0.25             | Moderate                     |
| HRC -> BPHCR | -<br>0.021     | 0.017             | 1.227                 | 0.220              | -0.05           | 0.01             | Weak                         |
| BPL -> BPHCR | 0.046          | 0.017             | 2.671                 | 0.008              | 0.01            | 0.08             | Weak                         |
| ICS -> BPHCR | 0.151          | 0.013             | 11.479                | 0.000              | 0.13            | 0.18             | Moderate                     |
| LR -> BPHCR  | 0.084          | 0.015             | 5.549                 | 0.000              | 0.06            | 0.12             | Weak                         |
| GPS -> BPHCR | 0.100          | 0.017             | 5.788                 | 0.000              | 0.07            | 0.13             | Weak                         |
| HSC -> BPHCR | 0.126          | 0.018             | 7.062                 | 0.000              | 0.09            | 0.16             | Weak                         |
| BPHCR -> BP  | 0.118          | 0.012             | 10.031                | 0.000              | 0.09            | 0.14             | Weak                         |
| BPHCR -> FP  | 0.157          | 0.068             | 2.301                 | 0.021              | 0.02            | 0.28             | Moderate                     |
| BPHCR -> NFP | 0.000          | 0.065             | 0.008                 | 0.994              | -0.12           | 0.12             | No effect                    |

## 5.8 Effect Size ( $F^2$ )

The reporting of effect size ( $F^2$ ) in quantitative research enables the results to be interpreted, gives the findings a practical importance, and offers a means of comparing the findings of different studies. The term "effect size" has been used in a number of different ways; but, according to contemporary research, it should be understood as "a quantitative reflection of the magnitude of any phenomena that is employed for the goal of answering a research question" (Lorah, 2018). Measures of effect size may be generically characterised as either measures of variance explained or measurements of standardised effect size. To be more exact, measures of effect size can be classed as measures of variance explained (Ciavolino et al., 2022). A large effect is indicated by a  $F^2$  value more than 0.35, moderate effect by above 0.15, and small effect by more than 0.02 (A. Cohen, 2010; J. Henseler et al., 2016; Chin, 2013). Similar criteria (Small effect for  $<0.05$ ; Medium effect for  $.05$  to  $<0.2$ , and large effect  $\geq 0.20$ ) were recommended by Kraft (2020) to be used in social science studies.

Table 5.31 presents the PLS-SEM analysis output for the effect sizes of the constructs used in the present research. The findings show that the  $F^2$  valued ranged from 0.00 to 1.529. Based on Cohen (2010) and Kraft (2020) criteria of evaluating  $F^2$  values, five effect sizes were found to be large, seven were small, and for one construct (BPHCR>NFP) the effect size was zero. There was not a single effect size that was medium. Concurrently, one of the  $F^2$  values was more than 1.0, suggesting that the KNW->BPHCR construct had a very big effect size. On the other hand, the effect size of the HRC->BPHCR construct was 0.003, which might be characterised as virtually nil despite the fact that Cohen (2010) and Kraft (2020) believe it to be a small effect size.

Table 5. 31 Effect size (F2) of the constructs

| Paths        | F <sup>2</sup> | Effect size |
|--------------|----------------|-------------|
| KNW -> BPHCR | 1.529          | Large       |
| MGT -> BPHCR | 0.613          | Large       |
| PLD -> BPHCR | 0.130          | Small       |
| HFS -> BPHCR | 0.566          | Large       |
| HRC -> BPHCR | 0.003          | Small       |
| BPL -> BPHCR | 0.021          | Small       |
| ICS -> BPHCR | 0.465          | Large       |
| LR -> BPHCR  | 0.127          | Small       |
| GPS -> BPHCR | 0.123          | Small       |
| HSC -> BPHCR | 0.173          | Small       |
| BPHCR -> BP  | 0.500          | Large       |
| BPHCR -> FP  | 0.025          | Small       |
| BPHCR -> NFP | 0.000          | None        |

### 5.8.2 Analysis of Model fit

The capacity of a model to create an accurate representation of the data is referred to as "fit" (i.e., generally the variance-covariance matrix). A model is considered to have excellent fit if it can be shown to be relatively consistent with the data and does not necessarily need to be respecified as a result of this (Peugh and Feldon, 2020). The different indices that have been used and suggested by previous studies (Cho et al., 2020; Kante et al., 2018; Kiyabo and Isaga, 2019; Nawaz, 2019) in SEM analysis of model fit include coefficient of determination ( $R^2$ ), predictive relevance ( $Q^2$ ), and Standardised Root Mean square Residual (SRMR). Current research investigates all these three indices of model fit as described in the following sections.

#### **5.8.2.1 Coefficient of determination ( $R^2$ )**

The accuracy of the model may be evaluated based on the strength of each structural path, which can be evaluated using the value of Coefficient of determination ( $R^2$ ) of the latent variables (Briones et al., 2018). Wright (1921) first proposed this concept, and nowadays it's usually represented by the coefficient of determination ( $R^2$ ), which expresses the degree to which the observed variables explain the latent variable. To determine whether or not there is a predictive ability, the value of  $R^2$  must be equal to or higher than 0.10 (Falk and Miller, 1992). However, according to other studies (Hair et al., 2011, 2013) focusing on marketing difficulties,  $R^2$  values greater than or equal to 0.75, 0.50, and 0.25 for endogenous latent variables may be roughly defined as strong, moderate, and weak. According to Urbach and Ahlemann (2010a), the value of  $R^2$  ought to be sufficiently high for the model to have a minimal degree of explanatory power.

The  $R^2$  values for the current research model have been presented in Table 5.32. Results show that BPHCR had a  $R^2$  value of 0.943 which indicate that 94.3 percent of the variation in BPHCR (best halal compliance practice) is determined by the constructs in the model (i.e., the ten HCR components). Simultaneously, the  $R^2$  value of BP was 0.964 indicating that 96.4 percent of its variation is determined by the constructs (i.e., FP and NFP observed variables) in the model. Hence, the statistical findings of  $R^2$  show a strong predictive capacity and explanatory power of the structural model used in the research.

#### **5.8.2.2 Predictive relevance ( $Q^2$ )**

Predictive relevance ( $Q^2$ ) is one of the criteria of model fit that combines cross-validation with function fitting, with the added benefit that estimating natural observables is more important than estimating artificial construct-parameters (Gentle et al., 2010). According to Reinartz et al. (2009)  $Q^2$  may be determined in two ways: by cross-validated communality or redundancy. However, redundancy is only computed for dependent variables in the model, but communality is calculated for all constructs and indicators in the model, and its coefficients tend to run higher (Fox, 2006). For this



reason, the structural model's predictive value is tested using cross-validated redundancy.

Since the PLS method places emphasis on pathways containing dependent variables, the redundancy calculation of  $Q^2$  is preferable (Hair, 2014; Hair et al., 2012). As a measure of the structural model's efficacy, it determines how well the latent variables predict the manifest variables that make up the block in question. According to the explanation provided by Hair (2014), the independent construct has predictive importance for the latent variable if and only if the  $Q^2$  value is greater than zero (0). Similarly, van Sint Fiet et al., (2022) stated that when compared to 0.00, a  $Q^2$  value that is larger than that value suggests that the model has predictive relevance. The  $Q^2$  value greater than 0.1 also indicates that the model is composed of constructs that have significant predictive relevance (Roth et al., 2022; Stark and Stocké, 2022).

The  $Q^2$  values in this research in PLS-SEM was measured using a blind estimation approach with an omission distance of 5–10. M. Henseler et al. (2009) argued that the blindfold procedure could only be used with dependent variables that were measured using a reflecting model. Therefore, Table 5.32 displays the outcomes of the cross-validated redundancy for the latent variables based on the blindfolding technique with an omission distance of 7.

According to the quality of the prediction provided by Table 5.32, the values of the cross-validated redundancy ( $Q^2$ ) for BPHCR and BP were 0.028 and 0.94 respectively. Both values are above zero which indicate an adequate predictive relevance by the constructs used in the model. Hence, predictive relevance has been established.

#### **5.8.2.3 Standardised Root Mean square Residual (SRMR)**

Avoiding model misspecification is made easier using the SRMR, which is introduced by Rg Henseler et al. (2014) as a quality of fit metric for PLS-SEM. The Root Mean Square Residual (RMSR) is a measure of the mean absolute value of the covariance

residuals, whereas the SRMR is calculated by inverting the sample covariance matrix and the projected covariance matrix to get correlation matrices. The SRMR is determined by subtracting the model-implied correlation matrix from the observed correlation matrix. Thus, the average size of the gaps between observed and anticipated correlations may be used as a hard and fast metric of (model) fit.

Hence, we used SRMR to evaluate how well the model matched the data in present research. The accepted SRMR value should be  $\leq 0.09$  (Cho et al., 2020; Hair et al., 2017) to conclude a good (Model) fit. However, according to Pavlov et al. (2021) and Ullman and Bentler (2004), a good compatibility is indicated by a result of 0.08 or less than 0.10. Results presented in Table 5.32 show that the value of SRMR is 0.089 for the present research model, which is less than the necessary value of 0.10 and indicates that the model fits well enough.

Table 5. 32 Model fit statistics

|       | <b>R<sup>2</sup></b> | <b>Q<sup>2</sup></b> | <b>SRMR</b> |
|-------|----------------------|----------------------|-------------|
| BPHCR | 0.943                | 0.028                | 0.089       |
| BP    | 0.964                | 0.94                 |             |

### 5.8.3 Hypothesis testing

To test the research hypotheses in this study, we have used the results of path coefficient statistics from the structural model. This hypothesis was tested using path estimates, T-statistics, and their associated p-values. The PLS algorithm test, T-statistic values, and p-values through the bootstrapping technique were used to determine the path coefficient values ( $\beta$ ) in SmartPLS 3.2.8. The path coefficient values suggested by J. Cohen (1988) are 0.02, 0.15, and 0.35, respectively indicating weak, medium, and large associations. Simultaneously, a T-statistic greater than 1.96 and a P-value less than 0.05 are statistically significant for a two-tailed test. The significance of a parameter may be

gauged by looking at its T-value. Accordingly, a greater T-value indicates a more significant association (Bakeman, 2005; Siegel and Wagner, 2022).

Additionally, a perfect positive association is concluded for a  $\beta$  value of 1.0. This implies a fluctuation in the observed variable corresponds to equal variation in the relevant latent variable. on the other hand, a perfect negative association is concluded for  $\beta$  value of -1.0 indicating a rise in the observed variable leads to equivalent reduction in the associated latent variable and vice-versa. Moreover, a zero  $\beta$  value explains that there is no association between the variables (Lancaster et al., 2018; Siegel and Wagner, 2022).

Figure 5.8 illustrates the research structural model showing both  $\beta$  values and  $R^2$  values after running the PLS algorithm analysis in 3.2.8 version of SmartPLS software (Ringle et al., 2015). The numbers within the circles indicate  $R^2$ , and the arrows connecting the observed and latent variables show the path coefficient ( $\beta$ ) findings. Likewise, the T-statics are shown in Figure 5.9 which has been derived from the bootstrapping analysis in SmartPLS software.

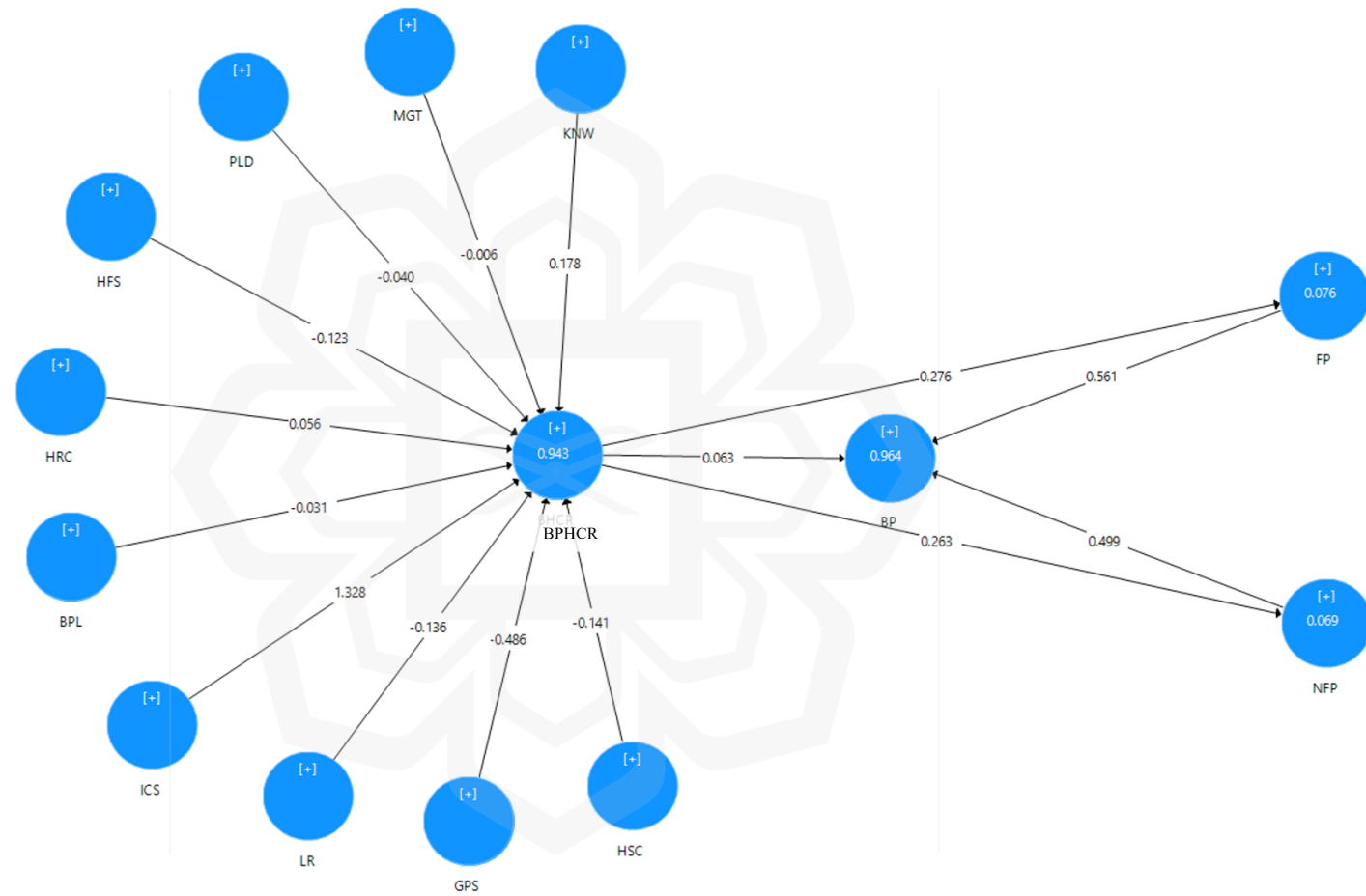


Figure 5. 8 Research structural model showing  $\beta$  values and  $R^2$  values

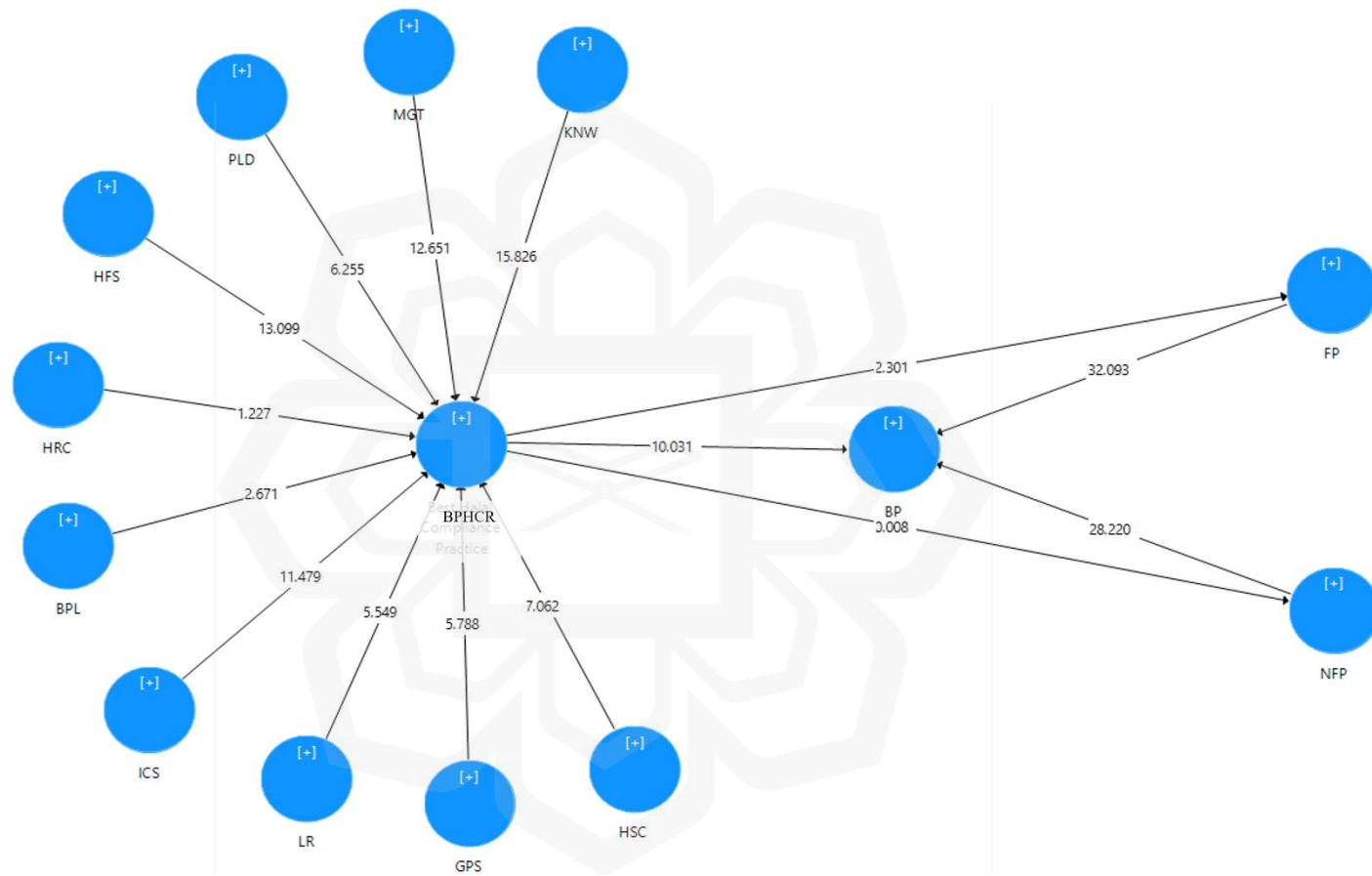


Figure 5. 9 Research structural model showing T-statistics

The statistical findings ( $\beta$ -value, T-statistics, and P-values) of hypothesis testing are presented in Table 5.33. A decision to accept a hypotheses was made based on a T-statistic that is larger than 1.96 and a P-value that is lower than 0.05 (Briones et al., 2018; Edeh et al., 2022; Falk and Miller, 1992; Hair et al., 2017; Hair et al., 2012; Imtiyaz et al., 2022; Usman et al., 2021).

Table 5. 33 Hypothesis testing

| Paths           | Hypotheses      | $\beta$ | St.<br>Dev | T-Statistic | P Values | Decision |
|-----------------|-----------------|---------|------------|-------------|----------|----------|
| KNW -><br>BPHCR | H <sub>1</sub>  | 0.234   | 0.015      | 15.826      | 0.000    | Accepted |
| MGT -><br>BPHCR | H <sub>2</sub>  | 0.184   | 0.015      | 12.651      | 0.000    | Accepted |
| PLD -><br>BPHCR | H <sub>3</sub>  | 0.108   | 0.017      | 6.255       | 0.000    | Accepted |
| HFS -><br>BPHCR | H <sub>4</sub>  | 0.223   | 0.017      | 13.099      | 0.000    | Accepted |
| HRC -><br>BPHCR | H <sub>5</sub>  | -0.021  | 0.017      | 1.227       | 0.220    | Rejected |
| BPL -><br>BPHCR | H <sub>6</sub>  | 0.046   | 0.017      | 2.671       | 0.008    | Accepted |
| ICS -><br>BPHCR | H <sub>7</sub>  | 0.151   | 0.013      | 11.479      | 0.000    | Accepted |
| LR -><br>BPHCR  | H <sub>8</sub>  | 0.084   | 0.015      | 5.549       | 0.000    | Accepted |
| GPS -><br>BPHCR | H <sub>9</sub>  | 0.100   | 0.017      | 5.788       | 0.000    | Accepted |
| HSC -><br>BPHCR | H <sub>10</sub> | 0.126   | 0.018      | 7.062       | 0.000    | Accepted |
| BPHCR -<br>> BP | H <sub>11</sub> | 0.118   | 0.012      | 10.031      | 0.000    | Accepted |

|                  |                 |       |       |       |       |          |
|------------------|-----------------|-------|-------|-------|-------|----------|
| BPHCR -<br>> FP  | H <sub>12</sub> | 0.157 | 0.068 | 2.301 | 0.021 | Accepted |
| BPHCR -<br>> NFP | H <sub>13</sub> | 0.000 | 0.065 | 0.008 | 0.994 | Rejected |

In light of this, the findings of testing the hypothesis may be described and discussed as follows:

- **H<sub>1</sub>:** Knowledge on halal and *toyyib* (KNW) has significant positive impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia and the association between KNW and BPHCR is moderate ( $\beta = 0.234$ , T-value = 15.826,  $P \leq 0.000$ ). Therefore, H<sub>1</sub> is accepted.

The first hypothesis was accepted implying that Knowledge on halal and *toyyib* (KNW) has significant positive impact on BPHCR by the MSMEs in halal-certified restaurants in Malaysia. The association between KNW and BPHCR was found to be moderate. This finding is in line with the study by Aziz and Chok (2013) that found knowledge of halal to be a key factor in the evaluation of halal compliance by Muslim consumers. Another study by Aliff et al. (2015) looked at the impact of knowledge on halal compliance in the food industry in Malaysia. The study found that companies with higher levels of knowledge about halal were more likely to have better halal compliance practises. Additionally, Syamsul et al. (2013) found that education and training programmes for food industry workers in Malaysia resulted in improved knowledge about halal and better halal compliance practises. Hence, it is concluded that KNW is indeed an important factor in evaluating halal compliance performance.

- **H<sub>2</sub>:** Management responsibility (MGT) has significant positive impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia and the association between MGT and BPHCR is moderate ( $\beta = 0.184$ , T-value = 12.651,  $P \leq 0.000$ ). Therefore, H<sub>2</sub> is accepted.

It was found that Management responsibility (MGT) has significant positive impact on BPHCR by the MSMEs in halal-certified restaurants in Malaysia. Simultaneously, the association between MGT and BPHCR was found moderate. Hence, the hypothesis was accepted. Such statistical findings provide enough evidence to conclude that MGT is a key factor in the performance of halal compliance practices. This is why MGT was found to be one of the common elements in all standards (e.g., MS1500:2019, Food hygiene regulation 2009, standard for Muslim-Friendly Hospitality Services (MS2610:2015), and others) and literature relevant to present study. The level of management commitment to compliance can impact the resources and attention dedicated to implementing and maintaining halal compliance practices, as well as the level of support and guidance provided to employees in following those practices. Additionally, effective management of halal compliance practices is critical for ensuring that a company is meeting the requirements of halal standard and meeting the expectations of Muslim consumers. This includes assigning responsibility for compliance to a specific individual or team, providing the necessary resources for implementing and maintaining compliance, and ensuring that all employees are trained on halal practices. In addition to the direct impact on compliance practices, management responsibility can also have an indirect impact on the performance of a company. For example, if a company is seen as not meeting halal requirements, it may face negative consequences in terms of consumer trust and loyalty, as well as potential legal and financial consequences. Such issue has been addressed by previous studies (Journal and Basic, 2016; Tiema, 2019; Tieman, 2017; Yapp and Fairman, 2005; Rezai et al., 2012).

- **H<sub>3</sub>:** Premise location and design (PLD) has significant positive impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia and the association between PLD and BPHCR is weak ( $\beta = 0.108$ , T-value = 6.255,  $P \leq 0.000$ ). Therefore, H<sub>3</sub> is accepted.

There was enough statistical evidence to conclude that premise, location and design (PLD) has significant positive impact on BPHCR by the MSMEs in halal-certified restaurants in Malaysia, although the association between the



variables was weak. This is in contrast with the halal standard MS1500:2019 compared to the importance given to premise location and design by the standard. Out of eight general requirements, the standard puts PLD as the second with eleven sub requirements. Such importance indicates a strong association between PLD and halal compliance which is not in line with the finding of present study. Simultaneously, the researcher was not aware of any specific studies that have examined the impact of location and design on halal compliance by SMEs in restaurants. However, it is generally accepted that the environment in which a business operates can have an influence on the attitudes and behaviours of the staff and customers, and this could potentially extend to the compliance with certain regulations like halal standards. For example, Ungku Fatimah et al., (2011) in their study found a strong association between premise and food safety which is another HCR component in present study. Likewise, PLD may have strong association with other HCR components which may eventually have an impact on BPHCR. Further investigation is required, in this regard. Moreover, if a restaurant is located in an area where there is a strong demand for halal food, the owner and staff may be more likely to prioritize compliance with halal regulations in order to meet the needs and expectations of their customers. Similarly, if the design of the restaurant makes it clear that it is a halal establishment, this may also influence the behaviour of the staff and customers in a way that promotes halal compliance.

- **H<sub>4</sub>:** Hygiene and food safety (HFS) has significant positive impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia and the association between HFS and BPHCR is moderate ( $\beta = 0.223$ , T-value = 13.099,  $P \leq 0.000$ ). Therefore, H<sub>4</sub> is accepted.

Hygiene and food safety (HFS) was prioritised over other HCR components and received the maximum weight in AHP application. Supporting such importance, it was found that HFS has significant positive impact on BPHCR. However, the association between the variables was found to be moderate. The significant positive impact was in line with the findings of previous studies (Marzuki et al., 2012a; Muda, Abd Rahim, et al., 2020; Ungku Fatimah et al., 2011) as well as the importance given by different standards and

rating systems in F&B industry. Hygiene and food safety have long been considered essential elements of halal compliance, as they ensure that the food served is both safe to consume and meets the dietary regulations of Islamic law. Despite such importance, the recent non-compliance issues (Journal and Basic, 2016; Tiema, 2019; Tieman, 2017; Yapp and Fairman, 2005; Rezai et al., 2012) were found to be related mainly to hygiene and food safety. The results of this study emphasise the need for restaurants to take proactive measures to ensure proper hygiene and food safety. Poor hygiene and food safety practices can potentially lead to the contamination of food with non-halal substances or with substances that are harmful to human health, which would make both the food and service non-compliant with halal standards. Many business in the halal F&B industry, in Malaysia, have had their halal certifications revoked because of poor hygiene and food safety issues throughout the years (Baharuddin et al., 2020).

There are likely several factors that contribute to the moderate association between HFS and halal compliance in restaurants. One possible reason is that while good hygiene and food safety practices are important for ensuring that food is suitable for consumption by Muslims and others, they are not the only factors that determine whether a restaurant is halal compliant. Other factors, such as the sourcing and preparation of ingredients, may also be important in determining whether a restaurant is compliant with halal standards. Hence, several other components of HCR have been considered in present study. Additionally, the extent to which a restaurant follows good hygiene and food safety practices may vary, and this may affect the strength of the association between these practices and halal compliance.

- **H<sub>5</sub>:** Human resources and culture (HRC) has a negative impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia. However, the impact is not significant ( $\beta = -0.021$ , T-value = 1.227,  $P \leq 0.220$ ). Therefore, H<sub>5</sub> is rejected.

Human resources and culture (HRC) was the least weighted component in BPHCR model after BPL. Experts put least importance to HRC, and BPL compared to other HCR components in AHP survey. From the SEM analysis, it

was found that HRC has a negative impact on BPHCR by the MSMEs in halal-certified restaurants in Malaysia. However, the impact was not significant which led the researcher rejecting the hypothesis. The researcher was not aware of any research that has specifically looked at the relationship between human resources and culture and halal compliance practices in restaurants. However, both operational performance and product quality were reported to have significant association with the attributes of human resources (Ahmad, 2018). Similarly, Noordin et al. (2009) in their study reported that the actors (i.e., human resources) play important role in effective halal certification process. These reports contradict the findings of the present study in regard to halal compliance performance. Simultaneously, Islamic culture has been emphasised by Ifada et al. (2019) in order to maintain *shri'ah* compliance in an organisation and to ensure food safety and halal compliance in F&B establishments (Nayak and Taylor, 2018). It has been realised while HRC can certainly play a role in helping to ensure compliance with halal practices, it is not the only factors that need to be considered. HRC may have strong association with other HCR components which may eventually have an impact on BPHCR. Further investigation is required, in this regard.

- **H<sub>6</sub>:** Branding, packaging, and labelling (BPL) has significant positive impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia and the association between BPL and BPHCR is weak ( $\beta = 0.046$ , T-value = 2.671,  $P \leq 0.008$ ). Therefore, H<sub>6</sub> is accepted.

Although the association between BPHCR and branding, packaging, and labelling (BPL) was weak, the impact of BPL on BPHCR was found to be significant. Therefore, sixth hypothesis was accepted. The seventh general requirement of halal certification is about packaging and labelling, as mentioned in MS1500:2019. The standard emphasises this component of halal compliance by detailing the packaging materials, packing process, labelling materials, use of artificial flavours, and information to be added to each package. The significance of the component is so important that the Department of Standards Malaysia has issued a separate standard, MS 2565:2014, explaining the general guidelines for packaging and labelling (Department of Standards Malaysia.,

2014). Moreover, certain requirements under BPL that are listed in HACCP standard MS 1480:2019 (Shah, 2020) are critical. The findings of the present study are in support of the significance of this component and further demonstrate its importance in ensuring the halal compliance and quality of food products. Through looking at different studies, it was also realised that the BPL could have a huge effect on how consumers think and feel, which may eventually have a positive impact on business performance. For example, according to Marzuki et al. (2012a), restaurants may utilise halal certification as a marketing tool and brand identity indicator. In conclusion, it is clear that BPL is an important and powerful component in BPHCR for restaurants, as found in the present study.

- **H<sub>7</sub>:** Image and customer satisfaction (ICS) has significant positive impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia and the association between ICS and BPHCR is moderate ( $\beta = 0.151$ , T-value = 11.479,  $P \leq 0.000$ ). Therefore, H<sub>7</sub> is accepted.

It was found that image and customer satisfaction (ICS) have a significant positive impact on BPHCR with a moderate association between the variables, which made us accept the seventh hypothesis of the study. This finding was consistent with previous studies on ICS, which suggest that improving brand image and customer satisfaction can be an effective way to increase brand performance, customer loyalty, and purchase intention. For example, Marzuki et al. (2012b) found in their study that restaurant managers intend to have a halal certificate to enhance their image as halal restaurants and to be compliant with halal standards. Other studies found that customer satisfaction is a good indicator of how well halal-certified restaurants are compliant with halal requirements. This component is another inclusion in the BPHCR model of the present study that is not included in MS1500:2019. It was prioritised as the seventh important component by the experts out of ten identified HCR components. Priority was given to ICS over BPL, HCR, and GPS. Such weightage of the component has been found to be consistent with the findings of the present study as well as previous studies (Fatimah et al., 2011; Sorooshian and Dahan, 2013). To conclude, ICS has a great role to play in

ranking and rating the halal compliance performance of restaurants and thus forming the model of BPHCR.

- **H<sub>8</sub>:** Legal requirement (LR) has significant positive impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia and the association between LR and BPHCR is weak ( $\beta = 0.084$ , T-value = 5.549,  $P \leq 0.000$ ). Therefore, H<sub>8</sub> is accepted.

One of the key requirements in MS1500:2019 that any business must meet both before and after receiving halal certification is the legal requirement (LR). Restaurants are no different from these requirements. Restaurants must be aware of and comply with any applicable legal regulations regarding halal certification. The findings of the present study show that LR has a significant positive impact on BPHCR. Hence, the hypothesis was accepted. However, the association between the variables was found to be weak. This indicates that while LR is crucial for halal certification, the associations between LR and BPHCR are not as strong as initially hypothesised. While previous research has not directly examined the influence of LR on halal compliance performance, it is reasonable to assume that LR plays like an enforcement tool to maintain halal integrity in certain aspects, which may eventually influence other components of HCR.

- **H<sub>9</sub>:** Green practice and sustainability (GPS) has significant positive impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia and the association between GPS and BPHCR is weak ( $\beta = 0.100$ , T-value = 5.788,  $P \leq 0.000$ ). Therefore, H<sub>9</sub> is accepted.

The proposed model of HCR in the present study is termed as the BPHCR with the inclusion of the green practises and sustainability (GPS) component along with other components (HRC and ICS) that were not included in the MS1500:2019 standard. The findings of the SEM analysis revealed that GPS has a significant positive impact on BPHCR. Hence the hypothesis was accepted. However, the association between the variables was weak. Such result indicates that although the GPS component has a positive influence on BPHCR,

further research is needed to understand the nature of this association and to strengthen the link between these two variables. The researcher was not aware of any research that has specifically looked at the relationship between GPS and halal compliance practices in restaurants. Razalli et al. (2012), in this regard, have found halal certification and green management practices to be closely related where halal compliance practice as an effort of improving company performance affects environmental sustainability. In present study, it is possible that a restaurant might prioritize halal compliance over sustainability, or vice versa, depending on the values and goals of the management and the needs and expectations of the customer base. Additionally, there may be other factors that influence the relationship between GPS and BPHCR, such as the availability and cost of sustainable products, the specific regulations, and requirements that the restaurant must follow, and the resources and constraints that the restaurant faces. Halal is directly related to sustainability, animal welfare and food safety. (Azam et al., 2019; Golnaz et al., 2010). In this regard, Tan et al. (2019) suggested eight different types of environmentally friendly activities to be used as a reference to ensure sustainability of restaurants in Malaysia. In addition, research (Baharuddin et al., 2015) shows that consumers have positive attitude towards halal products and services because of its adherence to sustainability concept. Further investigation is needed to conclude about the potential relationship between GPS and HCR in general.

- **H<sub>10</sub>:** Halal supply chain (HSC) has significant positive impact on best halal compliance practice (BPHCR) by the MSMEs in halal-certified restaurants in Malaysia and the association between HSC and BPHCR is weak ( $\beta = 0.126$ , T-value = 7.062,  $P \leq 0.000$ ). Therefore, H<sub>10</sub> is accepted.

Halal supply chain (HSC) showed a significant positive impact on BPHCR with a weak association between the variables. The analysis output provided enough statistical evidence to accept the hypothesis. Such output indicates that a restaurant's halal compliance performance may be influenced by the quality and reliability of its halal supply chain in several ways, which is also supported by previous studies. A restaurant that relies on a reliable and trustworthy halal supply chain is more likely to be able to source authentic halal

products, which is essential for maintaining halal compliance (Kamisah et al., 2018). The halal supply chain also plays a role in maintaining the integrity of halal and *toyyib* products by ensuring that they are stored and transported in a way that does not compromise their halal status (Castillo et al., 2018; Yahya et al., 2016). Moreover, a robust halal supply chain can help to prevent cross-contamination of halal products with non-halal products, which is essential for maintaining halal compliance (Md Isa and Chee Kifli, 2009; Rejeb et al., 2021; Yunchuan Zhang, 2017). Despite the weak association between HSC and BPHCR that has been found in the present study, its significant impact cannot be ignored when considering halal compliance. Depending on the specific regulatory requirements that apply to the restaurant, a well-managed halal supply chain may be necessary in order to meet these requirements and maintain halal compliance. Further investigation is needed to realise if HSC have a significant impact on the other HCR components of the present study.

- **H<sub>11</sub>, H<sub>12</sub>, and H<sub>13</sub>:** Best halal compliance practice (BPHCR) has significant positive impact on business performance (BP) of the MSMEs in halal-certified restaurants in Malaysia and their association is weak ( $\beta = 0.118$ , T-value = 10.031,  $P \leq 0.000$ ). Therefore, H<sub>11</sub> is accepted.

Best halal compliance practice (BPHCR) has significant positive impact on financial performance (FP) of the MSMEs in halal-certified restaurants in Malaysia and their association is moderate ( $\beta = 0.157$ , T-value = 2.301,  $P \leq 0.021$ ). Therefore, H<sub>12</sub> is accepted.

Best halal compliance practice (BPHCR) has a positive but non-significant impact on non-financial performance (NFP) of the MSMEs in halal-certified restaurants in Malaysia ( $\beta = 0.000$ , T-value = 0.008,  $P \leq 0.994$ ). The association between the variables is almost zero. Therefore, H<sub>13</sub> is rejected.

The current study's final three hypotheses were based on the assumption that BPHCR has a significant impact on halal-certified restaurants' business performance (BP), financial performance (FP), and non-financial performance (NFP). The output of SEM analysis revealed that BPHCR has a significant

positive impact on both BP and FP, with a moderate association between the variables. Hence, both the 11th and 12th hypotheses were accepted. However, although BPHCR showed a positive impact on NFP, the impact was not significant. Hence, the last hypothesis was rejected.

The findings of the present study are supported by previous studies most of which were investigated to realise the relationship between halal certification and business performance of halal certified SMEs. For example, Mohamed et al. (2014), and other researchers have found a significant relationship between halal certification and financial performance of a business. Likewise, a positive relationship was found between halal compliance practices and non-financial performance of business companies (Othman et al., 2017), although the relationship was not significant which is in-line with the findings of the present study. On the contrary, the research conducted by Salindal (2015) shows that halal certified food firms have better non-financial performance (innovation performance and market performance), and financial performance. The author further investigated (Salindal, 2019) and found that there is a significant difference between halal-certified food companies and those that are not regarding their innovative and commercial success. Additionally, Syazwan et al. (2017) in their study found that the implementation of a Halal food certificate has a beneficial effect on the operational and financial outcomes for a company and eventually on the business performance of the SMEs. This was further supported by the research of Hanim et al. (2016) in which they concluded that halal certification has the potential to be one of the decisive elements in ensuring the continued economic development of Malaysia's food companies.

In pursuit of realising the impact of halal certification on the financial success of businesses, Mohamed et al. (2014) concluded it to be unclear. The study was only able to conclude that performance of halal certified SMEs are considerably different from companies who do not have halal certification. Such research gap was addressed by Muda, Abd Rahim, et al. (2020) where they found that as a result of halal certification, the food business benefits from improving financial performance (i.e., sales records) and non-financial performance (i.e., enhanced food products and services in terms of safety,



cleanliness, and halal values) and there have been favourable chances in trade as well.

There are many halal-certified restaurants in Malaysia now, and the number is increasing every year. Consumers can recognise these restaurants by identifying the halal certificate, which is displayed in front of every halal-certified restaurant. However, by looking at the certificate, a customer cannot say how good or bad one halal restaurant is compared to another in terms of halal compliance performance. This is because the certificate does not include any halal compliance rating. It is possible that the lack of differentiation among halal-certified restaurants in Malaysia could be a factor contributing to the lack of a strong relationship between BPHCR and non-financial performance that has been found in the present study. Therefore, the present study serves the need for a standardised halal compliance rating system to be implemented in Malaysia, which would allow customers to make informed decisions and encourage halal-certified restaurants to maintain high levels of halal compliance. This could potentially strengthen the relationship between BPHCR and non-financial performance in restaurants.

## **5.8 CHAPTER SUMMARY**

This chapter provides the descriptive findings from the application of the survey instrument, that has been developed for HCR in this research, among 320 halal-certified restaurants in Malaysia. The majority of the halal-certified restaurants of Malaysia are distributed in three states, namely Kuala Lumpur, Selangor, and Johor. Data were collected from 320 restaurants that are located in these three states as well as other states in Malaysia. The background statistics show that, majority of the respondents were female and Muslim. More than half of the respondents had a diploma or first-degree level of education. Additionally, the surveyed sample in this research represented the MSMEs in the halal-certified restaurant business in Malaysia. The majority of them were small enterprises in terms of both annual sales-turnover and employee size.

The best halal compliance practices among the halal-certified restaurants have been investigated under the ten identified HCR components that included 67 auditable

items. Each item was scored on five-point Likert scale where 5 is the maximum and 1 is the minimum. Although the mean performance score of all halal compliance practices was 4.0, the performance of 'Image and customer satisfaction (ICS)' was below average. Such a finding indicates that halal-certified restaurants in Malaysia have a below average level of image and customer satisfaction. Data revealed that the performance of halal compliance practices was above average by all the restaurants. More than 81 percent of the restaurants demonstrated a 'Very good' level of halal compliance. 74.38% of restaurants received a "Good" HCR rating, 15% received a "Very good" rating, and 5.94% received an "Excellent" rating for halal compliance. No restaurant was rated "Poor." Most halal-certified restaurants demonstrated "Good" halal compliance performance.

Additionally, it has been realized that the satisfaction level of business performance of the halal-certified restaurants was just average for both financial and non-financial aspects. Around 10 percent of the respondents did not have a record of customer satisfaction and level of waiting time satisfaction which made them to have a score of 'zero' against these two criteria of non-financial performance. This can be one of the reasons for which the overall non-financial performance was not above average. The other hindering factors need to be explored by future research.

Finally, the chapter validates the proposed BPHCR model by assessing both measurement and structural models applying SEM analysis. The measurement of halal compliance in previous studies was merely based on the status of having a halal certificate or not. While halal certification considers complying with certain requirements, BHCP reflects practices against ten components of halal compliance that include 67 halal compliance practices. Hence, it is difficult to argue with the results of the previous studies based on the findings of the present study. Out of thirteen hypotheses, only two hypotheses were rejected. The selected components demonstrated a significant relationship and impact on the halal compliance performance of the restaurants. Such findings justify the development of the BHCP model that has been generated by the ten components in the present study.

## **CHAPTER 6**

### **CONCLUSION AND RECOMMENDATIONS**

#### **6.1. CHAPTER INTRODUCTION**

This chapter provides a conclusion of the research. A synopsis of the study is presented first, followed by the conclusion, so that readers may have a better understanding of the explanations. In addition, the chapter includes a number of other significant topics, such as the constraints of the study, the most significant contributions of the research, and, lastly, some suggestions for more research to be conducted in the future.

#### **6.2. RESEARCH SUMMARY**

Background of research and a review of the literature revealed a number of problems and a sizable research hole in the area of MSMEs' commercial performance and halal compliance. We were unable to locate any particular research or study that was done to gauge the best practises of halal compliance. Furthermore, no special effort was found to rate and classify the various halal compliance levels. On the other hand, it was discovered that the number of halal certifications, the alternatives available to customers, and the competitiveness among halal-certified businesses are all growing. This issue may be resolved by a grading system, which the halal food and beverage sector lacks. The current grading methods have also been shown to require improvements. The lack of a rating system for halal products and services has caused confusion among consumers regarding their trust in the halal logo, which has been identified as being shaken because of poor monitoring and ineffective implementation of the halal standard by JAKIM personnel. Moreover, previous studies (Ahmad, 2018; Aliff et al., 2015; M. A. Muhammad et al., 2020) have recommended to develop a model for a halal food management system that is more comprehensive. In halal F&B industry and food management system one of the most crucial sectors is the halal-certified

restaurants. In light of this, the following objectives were established for the present research that was carried out among the halal-certified restaurants across Malaysia.

**RO 1.** To identify and select the components of best halal compliance practice by the MSME owners of halal restaurants in Malaysia.

**RO 2.** To investigate the methods used by the various rating systems that are already in place in the relevant industries, with the following sub-objectives:

- c) To measure the weights of the selected HCR components by applying the Analytic Hierarchy Process (AHP) method.
- d) To recommend a linguistic rating scale for the numerical HCR score of halal-certified restaurants in Malaysia.

**RO 3.** To develop an HCR tool applying the absolute measurement of AHP and apply the tool to rank and rate halal-certified restaurants in Malaysia.

**RO 4.** To validate the model of best practice of HCR (BPHCR) by examining the relationship between different ratings of halal compliance and the business performance of the MSME owners of halal restaurants in Malaysia.

To achieve the objectives, survey was carried out in two stages. First stage involved the application of AHP to measure the weights of ten HCR components and selected rating intensities. At this stage, 15 experts took part in the survey from different organisations where the experts were selected using judgemental sampling method. The second stage survey was carried out among the halal-certified restaurants across Malaysia. Data were collected and accepted for analysis from a sample of 320 respondents.

The present study is the first of its kind to investigate the relationship between different components of halal compliance (i.e., KNW, MGT, PLD, and others) and the overall halal compliance performance of restaurants (i.e., BPHCR). Simultaneously, for the first time, the study explores the relationship between BPHCR and business performance. The measurement of halal compliance in previous studies was merely based on the status of having a halal certificate or not. While halal certification considers complying with certain requirements, BPHCR reflects practises against ten components of halal compliance that include 67 halal compliance practises. Hence, it is difficult to argue with the results of the previous studies based on the findings of the present study. Out of thirteen hypotheses, only two hypotheses were rejected. The selected

components demonstrated a significant relationship and impact on the halal compliance performance of the MSMEs. Such findings justify the development of the "best practise of halal compliance rating (BPHCR)" model that has been generated by the ten HCR components in the present study.

### **6.3. CONCLUSION**

The halal food industry is lacking any means of prioritising the choices of consumers and differentiating the performance of halal businesses, especially halal-certified food premises and/or restaurants. While JAKIM investigates the non-compliance offences of the certified businesses, it has become essential to look into the level of Halal compliance and rate them accordingly. The most stringent and widely used standard is MS-1500, but it omits crucial components that consumers look for. For this reason, a more all-inclusive method of ensuring halal compliance requires the introduction of new criteria. This will strengthen the confidence level of consumers who choose halal products and services. The effectiveness of a company's halal practises must also be reflected in its compliance rating. This is necessary in order to lessen the likelihood of consumers being harmed as a result of products and services that are substandard or that do not comply with Halal requirements. Addressing such problems, the present study was carried out with the objective of developing and validating a model of best practises of halal compliance rating (BPHCR) as a performance appraisal tool for halal-certified restaurants in Malaysia.

To achieve the objectives, the study reviews articles on different standards and rating systems relevant to the halal food and beverage industry. Ten components were identified as important for the Halal Compliance Rating (HCR). These components were also found to have a significant relationship with the business performance of halal-certified MSMEs. The selected ten HCR components were used to evaluate 67 indications of halal compliance performance. However, earlier research solely used halal certification, which only included a subset of halal practises as indicators of halal compliance. The research was carried out in Malaysia, where the target respondents were the owners and managers of halal-certified restaurants. Data analysis required the use of a variety of tools, such as Microsoft Excel, SPSS 26.0, and SmartPLS 3.2.8. The

absolute measurement of AHP was adopted to rank and rate 320 respondents. HFS obtained the maximum weight of 22%, followed by MGT (16%), KNW (15%), LR (10%), HSC (10%), PLD (8%), ICS (6%), and GPS (5%).

Most of the halal-certified restaurants in Malaysia are distributed among three states, namely Kuala Lumpur, Selangor, and Johor. The majority of them were small enterprises in terms of annual sales turnover and employee size. Although the mean performance score of all halal compliance practises was 4.0, the performance of "image and customer satisfaction (ICS)" was below average. Around 10 percent of the respondents did not have a record of customer satisfaction and level of waiting time satisfaction. This can be one of the reasons for which the overall non-financial performance was below average. Most halal-certified restaurants (74.38%) received a "good" HCR through the application of AHP.

The model of the best halal compliance practise (BPHCR) that was conceptualised during this study was validated through SEM analysis. This was accomplished by performing an analysis on the data gathered with the help of the HCR instrument, which was also built as part of the current study. Following an analysis of the measurement model, the significance and relevance of the path coefficients ( $\beta$ ), the coefficient of determination ( $R^2$ ), the predictive relevance ( $Q^2$ ), and the standardised residual mean residual (SRMR) were analysed. In the end, thirteen hypotheses were examined through the lens of the structural model's findings on the path coefficient statistics. Out of thirteen hypotheses, only two hypotheses were rejected. The selected components demonstrated a significant relationship and impact on the halal compliance performance of the MSMEs. Such findings justify the development of the "best practise of halal compliance rating (BPHCR)" model that has been generated by the ten HCR components in the present study.

Findings of the present study contribute minimising the huge research gap in relevant fields of studies. The present research is the first of its kind to look at the relationship between different parts of halal compliance (such as KNW, MGT, PLD, and others) and how well restaurants do overall in terms of halal compliance (i.e., BPHCR). At the same time, the study looks into the link between BPHCR and business performance for the first time. In previous studies, halal compliance was measured by

whether or not the food had a halal certificate. Halal certification looks at how well a product meets certain requirements. BPHCR, on the other hand, compares 67 halal compliance practises to ten components of halal compliance. Hence, based on the results of this study, it would not be justified to argue with the results of other studies.

Additionally, this study is the first of its kind in the field of halal industry to measure the halal compliance level, categorize, and rate them accordingly. It provides the possibility of developing a scoring system that can be used to benchmark the level of compliance among halal-certified business organizations. The proposed HCR tool can be used to set minimum rating requirements for any business during halal certification as a beginner rating. The rating can be updated periodically or during an on-site audit, which will help monitor the respective business performance against the halal compliance level. Such a rating system will be helpful for consumers to choose the best restaurant from the plenty of certified halal restaurants. Being the first of its kind, the present study could serve as the reference for a halal compliance rating system in the halal food industry. The model of HCR takes into account various aspects such as sustainability, customer satisfaction, and human resources and culture that are not considered in MS1500:2019. Such inclusion justifies the proposed model in the current study as the "best practise of halal compliance rating (BPHCR)." Implementing such a rating system would help to exhibit JAKIM's dedication to halal standards and show the public that it is dedicated to enhancing and preserving the reliability of the Halal logo.

The current research is a big step up from the study done by Ahmad (2018). In that study, she created an instrument with nine crucial factors to gauge how effectively SMEs can use a halal food management system. While the study was narrowed down to halal food, the target respondents were SMEs in all food industries. The present study, on the other hand, is narrowed down to MSMEs in the halal restaurant industry and extended to the overall halal management system. Furthermore, the instrument developed by Ahmad (2018) was generic to SMEs, but the current study has made it specific to halal-certified restaurants by revising the components of halal compliance. Also, Ahmad's (2018) study focused more on theory and policy development in the halal food management system as a way to make a difference. In the current study, the use of the AHP rating method made the tool more ready to be used to measure how well halal-certified restaurants in Malaysia are halal compliant. Finally, the tool used in this

study can be used in other parts of the halal industry without taking away from the value of the current ones. As time goes on and new rules or policies for managing Halal foods are put in place, this study will become more important for future research.

#### **6.4. LIMITATIONS OF RESEARCH**

The study's shortcomings may be attributed to two key factors. Since this study was the first of its type in the realm of the halal food industry, there was a dearth of literature directly relevant to the topic at hand. Secondly, there were obstacles like lack of time, money, proximity, human resources, etc. These obstacles presented a difficult challenge to the study, but in spite of these constraints, valuable insights were gained on the halal compliance practises of the restaurants in Malaysia. One of the biggest challenges was collecting reliable data in time. The challenge became even bigger due to COVID-19 pandemic restrictions. It took almost two years to complete the data collection. The data collection process was very laborious, but it was still possible due to the hard work and dedication of the researcher and the blessings of Almighty Allah (SWT). Apart from these challenges, some of the major shortcomings of the current research are listed as follows:

1. The scope of the research limited its focus to only halal-certified restaurants across Malaysia. Simultaneously, the face-to-face survey was limited to three states in Malaysia because of time, proximity, financial, and other constraints. However, the online survey was open for all halal-certified restaurants across Malaysia. In spite of the restrictions, the research was able to yield valid and reliable results due to the fact that it had a broad enough scope.
2. The location of the current research was limited to Malaysia, whereas halal-certified restaurants are now available in many parts of the world. Simultaneously, the focus was on halal-certified restaurants in the halal food industry. However, there are other sectors of the halal industry where similar research can be replicated. For example, halal food manufacturing, halal logistics and supply chain management, halal pharmaceuticals, halal tourism products, and halal cosmetics. The methodology of the current study can be adapted and replicated in any of these areas of the halal industry in order to



develop an HCR system for that industry. Investigating more than one area was beyond the scope of the present research.

3. The data was collected using a self-administered structured questionnaire. Hence, the reliability of the responses depended on the honesty of the respondents, as conducting an on-site audit was beyond the scope of the study. Despite this limitation, the large sample size ensured a higher degree of accuracy and robustness in the analysis.
4. There is plenty of relevant literature on compliance and rating systems in the conventional economy. However, limited literature and resources were available that were relevant to the halal food industry. Moreover, limited relevant research or attempts have been made to develop a methodology to measure the halal compliance level and rate them accordingly. Such limitations led the current research to investigate the methodology and approaches for measuring compliance level and the rating system available in the conventional economy.
5. The COVID-19 pandemic had an impact on the research survey. Since testing the applicability of the developed HCR tool relied fully on primary data collection, it was delayed and restricted due to the Movement Control Order (MCO) in Malaysia in multiple stages. Although the online approach was adopted using an email invitation and Google form, the response was too low to continue the required analysis. Moreover, the convenient sampling technique used in the present study made the data less representative of the population. Future research may need to consider alternative sampling methods, such as random sampling, to overcome these limitations.
6. The objective of the current research limited its scope for SEM analysis. Since the objective was just to validate the BPHCR model, the analysis did not include any moderating or mediating variables. It can be useful to analyse the moderating effects of variables like education, religion, company size, perceptions towards halal, etc. to understand how the relationships in the model may vary under different conditions. While this research did not cover the

moderating effects of such variables, it has laid the foundation for future research to explore the BPHCR model with a wider scope.

7. The study was conducted as part of a university-level Ph.D. programme; therefore, substantial funding was required to cover expenses including tuition, housing, and survey administration. The researcher was awarded a small scholarship that only covered a fraction of the total cost of the study. With this in mind, one of the main obstacles to completing the study on time and expanding the survey to other parts of Malaysia was the lack of funding for doing so.

## **6.5. RECOMMENDATIONS**

The halal compliance rating (HCR) system that has been developed and introduced in this research requires policy recommendations. The rating model would not be effective without a thorough set of policy recommendations, including standards for certification and compliance as well as measures to ensure the accuracy and integrity of halal-certified restaurants. Additionally, the above list of research limitations points to a number of possible ways to do more research. The recommendations are discussed as follows:

### **6.5.1 Policy recommendations**

It is highly recommended to introduce and implement an HCR system among the restaurants in Malaysia where the number of halal-certification is increasingly growing. If customers are unable to easily identify which restaurants are more committed to halal compliance, it may be more difficult for those restaurants to differentiate themselves and potentially gain a competitive advantage.

The suggested instrument might be utilised by halal-certified restaurants as a diagnostic tool to detect and highlight areas where particular changes are required in the implementation of halal management systems. Managers, Halal executives, and Halal committees may find it useful to assess the company's progress in implementing a halal management system on a regular basis. The implementation scores of restaurants are

proposed to be ranked by the ten HCR components, with the lowest scoring components being targeted for improvement.

While introducing the HCR system, it is recommended to make it mandatory that all halal-certified restaurants in Malaysia implement the rating system and publicly display their ratings. To encourage restaurants to implement this practise, incentives can be provided for restaurants that achieve high ratings, such as financial rewards or preferential treatment in government procurement.

It is suggested that when the HCR system is put in place, all halal-certified restaurants in Malaysia must use the rating system and show their ratings to the public. To get restaurants to use this practise, they can be rewarded for getting high ratings, such as with money or special treatment when updating their halal certificate or applying for new product certification.

Auditing bodies, such as JAKIM, must establish a system for verifying rating accuracy and penalising restaurants that violate rating requirements. At the same time, all halal-certified restaurants should be re-evaluated regularly to make sure they keep up their high levels of halal compliance.

Halal certification authorities should also encourage the use of the rating system by consumers through marketing and public education campaigns. Such campaigns should focus on the importance of halal compliance and how the rating system can help make informed decisions. In this regard, collaboration can be effective with industry stakeholders, such as halal certification bodies and trade associations, to promote the use of the rating system and support its implementation.

Finally, investments should be made in training and support programmes for restaurants to help them achieve high ratings and improve their halal compliance practises. Improved halal understanding and halal compliance practices were found to be the consequences of education and training programmes for Malaysian employees in the food sector. Hence, it is recommended that organisations in the food sector regularly hold educational and training programmes to ensure that their employees have an adequate understanding of halal requirements and are compliant with them. Simultaneously, it is important to monitor the effectiveness of the rating system and make adjustments as needed to ensure that it is meeting its intended goals.

### **6.5.2 Future research**

The challenges and limitations of present research widen the scope of future research in several ways. Some of the potential scope and recommendations are as follows:

The researcher was unaware of a clear and comprehensive explanation of the current auditing practises by JAKIM to investigate the halal compliance practises of restaurants. Hence, a comprehensive recommendation for implementing the HCR tool in the auditing process was not possible. Future research could look into the practical implications and effectiveness of using the HCR tool when auditing halal-certified restaurants. As a result, develop a more comprehensive guideline for using HCR techniques.

The researcher was unable to find any studies that specifically looked at how restaurant location and design affected halal compliance among SMEs. Previous studies found a strong association between premises and food safety, which is another HCR component in the present study. Likewise, PLD may have a strong association with other HCR components, which may eventually have an impact on BPHCR. More research should be carried out to investigate the impact of PLD on different aspects of halal compliance.

Sustainability is a crucial element in food management systems. In the present study, although the GPS component showed a positive influence on BPHCR, the impact was not strong. Further research is needed to understand the nature of this association and to strengthen the link between these two variables.

Similar studies should be carried out in other parts of the world, where halal-certified restaurants are on the rise, and the results compared. This would allow us to extend the generalizability of the findings to a larger population and enhance the adaptability of the HCR system globally. Additionally, the focus of the present research was on halal-certified restaurants in the halal food industry. Future studies should focus on other sectors of the halal industry where similar research can be replicated. For

example, halal food production, halal logistics and supply chain management, halal pharmaceuticals, halal tourism products, and halal cosmetics.

In the current study, one of the major challenges was data collection. The findings are based on the data that was collected using a self-administered questionnaire. Because onsite auditing and scoring were beyond the scope and authority of the researcher. So, it was assumed that the participants were sincere and honest while responding to the questionnaire. Hence, there is a high chance that the HCR score of an authorised auditor will be different from the HCR scores found in the present study. Future researchers are highly encouraged to conduct an authorised audit to measure the HCR scores of the restaurants and see if there are any significant differences with the findings of the present study.

It was beyond the scope and objectives of the present study to investigate the moderating effects of antecedent factors (e.g., education, religion, company size, perceptions towards halal, etc.) on the halal compliance performance of restaurants. Future researchers may consider including moderating variables in their analysis to understand how the relationships in the model may vary under different conditions.

Finally, it is essential to realise the attitude of both consumers and MSMEs towards rating systems in the halal industry and food safety. It is unclear whether these two groups of the population are willing to accept and use such a rating system. Studies relevant to the subject matter are very limited. Future researchers may look into this research gap and carry out their studies.

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## APPENDIX-I: RESEARCH QUESTIONNAIRE (ENGLISH)

### Research Questionnaire (English Version)

Dear sir/Madam

I, Md. Siddique E Azam, research scholar at the International Institute for Halal Research and Training (INHART), International Islamic University Malaysia (IIUM). I am pursuing a Ph.D. on the title “Developing and Validating Halal Compliance Rating as Performance Appraisal Tool for Halal Certified Restaurants in Malaysia”. The objective of my research is to develop and validate a rating tool to measure the halal compliance level of the restaurants in Malaysia. My humble request to you to fill the questionnaire and return the same. The tool is comprised of ten (10) different measurable aspects/components of restaurants that require to comply with best halal practices. At this point of my research, to validate the rating tool, it is required to collect your valuable responses against the ten components of best halal practices in a restaurant. In this regard, this questionnaire was developed, reviewed by the experts, and approved by the International Institute for Halal Research and Training (INHART), IIUM to carry out the survey.

Your sincere support in terms of investing time with us to respond to this questionnaire would be a great contribution to accomplish the study.

#### Section A: Respondents' Profile

|     |                       |                                                                                                                                                       |                                                                                                                               |
|-----|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| [1] | Gender                | <input type="checkbox"/> Male                                                                                                                         | <input type="checkbox"/> Female                                                                                               |
| [2] | Education             | <input type="checkbox"/> Non-formal education<br><input type="checkbox"/> Primary school<br><input type="checkbox"/> Secondary school                 | <input type="checkbox"/> Diploma<br><input type="checkbox"/> First degree/equivalent<br><input type="checkbox"/> Postgraduate |
| [3] | Ethnicity by religion | <input type="checkbox"/> Muslim                                                                                                                       | <input type="checkbox"/> Non-Muslim                                                                                           |
| [4] | Sate                  | <input type="checkbox"/> Selangor<br><input type="checkbox"/> Johor Bahru                                                                             | <input type="checkbox"/> Kuala Lumpur<br><input type="checkbox"/> Other                                                       |
| [5] | Annual sales turnover | <input type="checkbox"/> RM300,000 to < RM3 million<br><input type="checkbox"/> RM3 million to < RM20 million<br><input type="checkbox"/> < RM300,000 |                                                                                                                               |
| [6] | Number of employees   | <input type="checkbox"/> 5 to < 30                                                                                                                    | <input type="checkbox"/> 30 to < 75 <input type="checkbox"/> < 5                                                              |

\*You can also Participate online scanning the QR code  
(Only English version)



## Section B: Measuring Halal Compliance

| HCR Components                                                                                                                                                                                                          | Scale of response        |                          |                          |                          |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>Part B1: Knowledge on halal and <i>toyyib</i> (KNW):</b> This part is to know your level of knowledge regarding the meaning, application, and implication of both halal and <i>toyyib</i> .                          |                          |                          |                          |                          |                          |
| As a manager/owner of the restaurant, please state your level of knowledge on the following points on a scale of 5 to 1→                                                                                                | Excellent<br>(5)         | Good<br>(4)              | Average<br>(3)           | Satisfactory<br>(2)      | Poor (1)                 |
| [7] Knowledge on the meaning of halal defined in MS1500:2019                                                                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [8] Knowledge on the meaning of <i>toyyib</i> defined in MS1500:2019                                                                                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [9] The <i>toyyiban</i> aspect to ensure the quality of any product and services                                                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [10] Knowledge of halal and <i>toyyib</i> to retain the halal integrity and consumer trust                                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [11] The <i>toyyiban</i> aspect related to the sustainability of the products and services                                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [12] Halal knowledge to identify the critical ingredients in food preparation                                                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [13] Knowledge on <i>toyyib</i> to realise the critical points (e.g. transportation, receiving and storing inventory, processing foods, raw materials and ingredients, and serving) in the supply chain (farm to fork). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [14] Knowledge to maintain good gesture (e.g. behaviour, appearance, Islamic greetings etc.), presentation (presenting foods, presenting yourself, and overall presentation of the restaurant), and service.            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| <b>Part B2: Management Responsibility (MGT):</b> This refers to the duties and responsibilities that ensure halal practices are followed and implemented within the restaurant. E.g., Internal Halal Committee (IHC), appointing Muslim workers, halal training to employees, arranging meetings, internal auditing, providing facilities to meet faith-based needs, etc. |                          |                          |                          |                          |                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Please state to what level you agree or disagree on the following statements on a scale of 5 to 1 →                                                                                                                                                                                                                                                                       | Strongly Agree (5)       | Agree (4)                | Neutral (3)              | Disagree (2)             | Strongly Disagree (1)    |
| [15] Management is concerned about the halal integrity in food preparation (e.g., cleaning, use of tools, use of ingredients, cooking process, serving, etc.)                                                                                                                                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [16] Management has formed a unit of Internal Halal Committee (IHC)                                                                                                                                                                                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [17] The responsibility of internal halal control system to lead has been given to Muslim personnel                                                                                                                                                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [18] Management arranges regular training on halal awareness for the employees                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [19] Management ensures sufficient resources (e.g., manpower, facility, finances, and infrastructure) to implement internal halal control system                                                                                                                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [20] Management ensures that the Muslim workers are allowed to perform their prayers                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [21] IHC involves the staff in decision making process relevant to halal management                                                                                                                                                                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [22] Regular meetings are arranged by the IHC to address and solve any issue                                                                                                                                                                                                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Part B3: Premise (PLD): Premise layout, location and design.</b>                                                                                                                                                                                                                                                                                                       |                          |                          |                          |                          |                          |

|                                                                                                                              |                                       |                                       |                                       |                                       |                                                                         |
|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------------------------------------------|
| [23] Layout of the premise allows a proper service process flow                                                              |                                       |                                       |                                       |                                       |                                                                         |
| [24] Layout of the premise ensures a proper employee flow                                                                    | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>                                                |
| [25] The layout design of the premise facilitates proper cleaning process for hygiene maintenance                            | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>                                                |
| [26] Muslim friendly sanitary facilities (e.g., water friendly toilets, basins, soap, gender segregation, etc.) are provided | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>                                                |
| [27] A dedicated space for prayer ( <i>solat</i> ) is provided for the Muslim workers                                        | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>                                                |
| [28] Pets and other animals are not allowed inside the premise                                                               | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>                                                |
| [29] Praying area is segregated from any food processing (Kitchen) area                                                      | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>                                                |
| [30] The premise is effectively segregated and well insulated (at least 5km) from pig farm or its processing activities      | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>                                                |
| [31] The premise does not display any sign, picture, object, or symbol that goes against halal standard                      | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>              | <input type="checkbox"/>                                                |
| <b>Part B4: Hygiene and Food Safety (HFS)</b>                                                                                |                                       |                                       |                                       |                                       |                                                                         |
| [32] Do you have a Good Hygiene Practice (GHP) grading for your restaurant? (For example, A, B, C, or No Grade (D))          | If yes, please mention your grading   |                                       |                                       |                                       | No                                                                      |
|                                                                                                                              | A (5)<br><br><input type="checkbox"/> | B (4)<br><br><input type="checkbox"/> | C (3)<br><br><input type="checkbox"/> | D (2)<br><br><input type="checkbox"/> | The application is under processing (1)<br><br><input type="checkbox"/> |
| [33] All equipment (e.g., oven, deep frier, freezer, baking sheets, etc.) and kitchen                                        | Strongly Agree (5)                    | Agree (4)                             | Neutral (3)                           | Disagree (2)                          | Strongly Disagree (1)                                                   |

|                                                                                                                            |                          |                          |                          |                          |                          |
|----------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| utensils are cleaned and sanitised regularly                                                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [34] Proper ventilation is ensured for safe storage of foods and pleasant atmosphere at kitchen and storage area           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [35] Tabletops, and chairs are cleaned regularly after every certain period (e.g. every 1hr, 30mins).                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [36] There is a process to ensure no dripping and clogging in water pipes in kitchen and restroom                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [37] Pest control measure is taken regularly to eliminate any presence of cockroaches, ants, flies, rats, etc.             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [38] Surfaces that come in direct contact of foods are cleaned after every task with clean towel/wipes/tissue              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [39] Wash basins, toilet sits, and toilet floors are cleaned frequently                                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [40] Cleaning items such as detergent, mops, sanitizers, wipes, etc. are carefully stored away from food preparation area. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [41] Garbage cans are cleaned frequently                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [42] There is adequate lighting to identify presence of any non-hygiene                                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Part B5: Human resources and culture (HRC)</b>                                                                          |                          |                          |                          |                          |                          |
| [43] All staff maintain a good personal hygiene                                                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [44] The code of conduct (e.g., greetings, employee appearance, communication                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                                                                                                                                                                             |                                                                |                          |                          |                          |                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------|--------------------------|--------------------------|----------------------------------------|
| with the customers) in the workplace reflects a morale of Islamic culture in the restaurant                                                                                 |                                                                |                          |                          |                          |                                        |
| [45] A specific designed attire is provided for all staff following the KKM guidelines                                                                                      | <input type="checkbox"/>                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>               |
| [46] Training on different aspects of halal (Halal file, internal halal auditing, Halal marketing, halal hospitality service, halal ingredients, etc.) is provided to staff | <input type="checkbox"/>                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>               |
| [47] All food handlers have received training on food handling                                                                                                              |                                                                |                          |                          |                          |                                        |
| <b>Part B6: Branding, packaging, and labelling (BPL)</b>                                                                                                                    |                                                                |                          |                          |                          |                                        |
| [48] The packaging design, sign, symbols, logo, name, pictures are compliant to shari'ah                                                                                    | <input type="checkbox"/>                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>               |
| [49] Hygiene and cleanliness are maintained during packing foods for home delivery or take away order                                                                       | <input type="checkbox"/>                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>               |
| [50] All marketing activities (e.g., leaflets, social media advertising etc.) are in compliance with shari'ah principles                                                    | <input type="checkbox"/>                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>               |
| [51] All packaging materials are non-hazardous and halal compliant                                                                                                          | <input type="checkbox"/>                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>               |
| [52] Labelling and information of our food menus and products fulfils the requirements of halal certification                                                               | <input type="checkbox"/>                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>               |
| <b>Part B7: Image and level of customer satisfaction (ICS)</b>                                                                                                              |                                                                |                          |                          |                          |                                        |
| [53] As a Halal certified restaurant, do you have any survey on                                                                                                             | If yes, please state the level of your customers' satisfaction |                          |                          |                          | <input type="checkbox"/> No, we do not |



|                                                                                                                                                                                                                                           |                                                |                                         |                                        |                                           |                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------|----------------------------------------|-------------------------------------------|-----------------------------------------------------------------|
| customer satisfaction (e.g., online review, or review from walk-in customers)?                                                                                                                                                            | <input type="checkbox"/><br>Very satisfied     | <input type="checkbox"/><br>Satisfied   | <input type="checkbox"/><br>Average    | <input type="checkbox"/> Poorly satisfied | have a review<br><input type="checkbox"/> Very poorly satisfied |
| [54] Based on the customer satisfaction and your service, how many stars would you give to your restaurant?                                                                                                                               | <input type="checkbox"/> Five (5)              | <input type="checkbox"/> Four (4)       | <input type="checkbox"/> Three (3)     | <input type="checkbox"/> Two (2)          | <input type="checkbox"/> One (1)                                |
| [55] Overall, our restaurant has a good image and reputation locally (i.e., in Malaysia and/or within the service area).                                                                                                                  | <input type="checkbox"/> Strongly agree (5)    | <input type="checkbox"/> Agree (4)      | <input type="checkbox"/> Neutral (3)   | <input type="checkbox"/> Disagree (2)     | <input type="checkbox"/> Strongly disagree (1)                  |
| <b>Part B8: Legal requirement (LR)</b>                                                                                                                                                                                                    |                                                |                                         |                                        |                                           |                                                                 |
| Please state your opinion on the following statement on a scale of 5 (strongly agree) to 1 (Strongly disagree).                                                                                                                           |                                                |                                         |                                        |                                           |                                                                 |
| [56] All food handlers have certificate of anti-typhoid vaccination                                                                                                                                                                       | <input type="checkbox"/> Strongly agree (5)    | <input type="checkbox"/> Agree (4)      | <input type="checkbox"/> Neutral (3)   | <input type="checkbox"/> Disagree (2)     | <input type="checkbox"/> Strongly disagree (1)                  |
| [57] Documents related to halal inspection are prepared and maintained properly                                                                                                                                                           | <input type="checkbox"/>                       | <input type="checkbox"/>                | <input type="checkbox"/>               | <input type="checkbox"/>                  | <input type="checkbox"/>                                        |
| [58] Halal certification is up to date                                                                                                                                                                                                    | <input type="checkbox"/>                       | <input type="checkbox"/>                | <input type="checkbox"/>               | <input type="checkbox"/>                  | <input type="checkbox"/>                                        |
| [59] The halal mark is displayed in front of the restaurant                                                                                                                                                                               | <input type="checkbox"/>                       | <input type="checkbox"/>                | <input type="checkbox"/>               | <input type="checkbox"/>                  | <input type="checkbox"/>                                        |
| [60] The right use of halal certification and logo has been preserved (e.g. using the logo only for the specific food premise that got certification, no stamping of the halal logo on a food product that has not got halal certificate) | <input type="checkbox"/>                       | <input type="checkbox"/>                | <input type="checkbox"/>               | <input type="checkbox"/>                  | <input type="checkbox"/>                                        |
| [61] Have you ever experienced any type of offences regarding the legal requirements of halal certification?                                                                                                                              | <input type="checkbox"/> No offence at all (5) | <input type="checkbox"/> Offence during | <input type="checkbox"/> Minor offence | <input type="checkbox"/> Major offence    | <input type="checkbox"/> Serious offence                        |

|                                                                                                                                                                    |                                                   |                                          |                                            |                                          |                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------|--------------------------------------------|------------------------------------------|---------------------------------------------------------|
|                                                                                                                                                                    |                                                   | internal<br>audit<br>only (4)            | detected<br>by<br>JAKIM<br>(3)             | detected by<br>JAKIM (2)                 | detected<br>by JAKIM<br>(1)                             |
| <b>Part B9: Green practice and sustainability (GPS)</b>                                                                                                            |                                                   |                                          |                                            |                                          |                                                         |
| Please state your opinion on the following statement on a scale of 5 (strongly agree) to 1 (Strongly disagree) →                                                   | <input type="checkbox"/><br>Strongly<br>agree (5) | <input type="checkbox"/><br>Agree<br>(4) | <input type="checkbox"/><br>Neutral<br>(3) | <input type="checkbox"/><br>Disagree (2) | <input type="checkbox"/><br>Strongly<br>disagree<br>(1) |
| [62] Water usage is well managed                                                                                                                                   | <input type="checkbox"/>                          | <input type="checkbox"/>                 | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input type="checkbox"/>                                |
| [63] Food waste is minimised                                                                                                                                       | <input type="checkbox"/>                          | <input type="checkbox"/>                 | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input type="checkbox"/>                                |
| [64] Eco-friendly brands are used for cleaning chemical liquids and other applications.                                                                            | <input type="checkbox"/>                          | <input type="checkbox"/>                 | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input type="checkbox"/>                                |
| [65] Use of plastic has been minimised                                                                                                                             | <input type="checkbox"/>                          | <input type="checkbox"/>                 | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input type="checkbox"/>                                |
| [66] We ensure the disposable items (e.g., toilet paper, glass bottles, cardboards, wood boxes, cups, etc.) used in the premise are made from recycled materials   | <input type="checkbox"/>                          | <input type="checkbox"/>                 | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input type="checkbox"/>                                |
| [67] The principles of 3Rs (reduce, reuse, and recycle) are practiced in our restaurant                                                                            | <input type="checkbox"/>                          | <input type="checkbox"/>                 | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input type="checkbox"/>                                |
| <b>Part B10: Halal supply chain (HSC)</b>                                                                                                                          |                                                   |                                          |                                            |                                          |                                                         |
| [68] We ensure our partners have got halal certification for their products/services before partnering with them                                                   | <input type="checkbox"/>                          | <input type="checkbox"/>                 | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input type="checkbox"/>                                |
| [69] Vehicles are dedicated to carry only halal food items                                                                                                         | <input type="checkbox"/>                          | <input type="checkbox"/>                 | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input type="checkbox"/>                                |
| [70] <i>Toyyiban</i> aspect (freshness, quality, etc.) is maintained during the transportation of raw ingredients like vegetables, condiments, fruits, meats, etc. | <input type="checkbox"/>                          | <input type="checkbox"/>                 | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input type="checkbox"/>                                |

|                                                                                                           |                          |                          |                          |                          |                          |
|-----------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| [71] Detail record of loading (e.g., time, location, person-in-charge) are maintained                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [72] Detail record of unloading inventory (e.g., location, time, person-in-charge) are maintained         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [73] The driver is aware of the halal requirements for handling the inventory items during transportation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Section C: Business Performance

|                                                                                                                   |                           |                          |                          |                          |                           |
|-------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------|--------------------------|--------------------------|---------------------------|
|                                                                                                                   | Scale of response         |                          |                          |                          |                           |
| <b>Part C1: Financial performance</b>                                                                             |                           |                          |                          |                          |                           |
|                                                                                                                   | Very Highly satisfied (5) | Highly Satisfied (4)     | Average (3)              | Poorly satisfied (2)     | Very poorly satisfied (1) |
| [74] Return on Assets (ROA): Net income over total average assets                                                 | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  |
| [75] Gross Profit Ratio: Profit before tax over net sales                                                         | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  |
| [76] Net Profit Ratio: Profit after tax over net sales                                                            | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  |
| [77] Current Ratio: Current asset over current liabilities                                                        | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  |
| [78] Debt ratio: Total liability over total assets                                                                | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  |
| <b>Part C2: Non-financial performance</b>                                                                         |                           |                          |                          |                          |                           |
| (Please rate your performance for the item no. 78 to 82 on a scale of 5 to 1)→                                    | Very Highly satisfied (5) | Highly Satisfied (4)     | Not sure (3)             | Poorly satisfied (2)     | Very poorly satisfied (1) |
| [79] Level customer satisfaction against your service<br>(Please skip the question if you do not have any record) | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  |
| [80] To what level you are satisfied retaining customers                                                          | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  |
| [81] Level of waiting time satisfaction by customers                                                              | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  |

|                                                                                                                |                                                                           |                          |                          |                          |                          |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| (Please skip the question if you do not have any record)                                                       |                                                                           |                          |                          |                          |                          |
| Please rate the performance of your business for the following two items on a scale of 5 to 1                  | Much better than competitors (5) to ..... Much worse than competitors (1) |                          |                          |                          |                          |
|                                                                                                                | 5                                                                         | 4                        | 3                        | 2                        | 1                        |
| <b>[82]</b> Product innovation (this means you keep offering new dishes in the menu list)                      | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>[83]</b> Competitive position (this means your products are unique and not accessible in other restaurants) | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Thank you for your precious time and contributing this research work.

Sincerely

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 International Islamic University Malaysia (IIUM), Gombak, 53100  
[Siddique.e@live.iium.edu.my](mailto:Siddique.e@live.iium.edu.my)

## APPENDIX II: RESEARCH QUESTIONNAIRE (MALAY VERSION)

Tuan/Puan yang dihormati

Saya, Md. Siddique E Azam, merupakan calon sarjana doktor falsafah (PHD) di Institut Penyelidikan dan Latihan Halal Antarabangsa (INHART), Universiti Islam Antarabangsa Malaysia (UIA). Saya sedang menjalankan kajian PhD yang bertajuk "**Membangunkan dan Mengesahkan Tahap Pematuhan Halal sebagai Alat Penilaian Prestasi untuk PKS Bertauliah Halal di Malaysia**". Objektif kajian saya adalah untuk membangunkan dan mengesahkan alat penilaian untuk mengukur tahap pematuhan halal restoran-restoran di Malaysia. Maka, saya dengan berbesar hati sekiranya pihak tuan atau puan sudi untuk mengisi borang soal selidik dan mengembalikan semula borang ini setelah selesai mengisinya. Alat ini terdiri daripada sepuluh (10) aspek atau komponen restoran yang berbeza yang boleh diukur dalam mematuhi pengamalan halal yang terbaik. Oleh yang demikian, untuk mengesahkan alat penilaian ini, maklum-balas yang berharga daripada pihak tuan atau puan amatlah diperlukan terhadap sepuluh komponen pengamalan halal terbaik di restoran. Maka, borang soal selidik ini telah dibangunkan, disemak oleh pakar-pakar, dan diluluskan oleh Institut Penyelidikan dan Latihan Halal Antarabangsa (INHART), IIUM untuk menjalankan kaji selidik ini.

Sokongan ikhlas anda dari segi masa yang dilaburkan dengan pihak kami untuk menjawab soalan kaji selidik ini akan memberikan sumbangan yang besar untuk melengkapkan kajian ini.

### Bahagian A: Profil Responden

|     |                          |                                                                                                                                                                |                                                                                                                                 |
|-----|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| [1] | Jantina                  | <input type="checkbox"/> Lelaki                                                                                                                                | <input type="checkbox"/> Perempuan                                                                                              |
| [2] | Pendidikan               | <input type="checkbox"/> Pendidikan bukan formal<br><input type="checkbox"/> Sekolah Rendah<br><input type="checkbox"/> Sekolah Menengah                       | <input type="checkbox"/> Diploma<br><input type="checkbox"/> Ijazah pertama/setaraf<br><input type="checkbox"/> Pasca- siswazah |
| [3] | Etnik mengikut agama     | <input type="checkbox"/> Islam                                                                                                                                 | <input type="checkbox"/> Bukan Islam                                                                                            |
| [4] | Sate                     | <input type="checkbox"/> Selangor<br><input type="checkbox"/> Johor Bahru                                                                                      | <input type="checkbox"/> Kuala Lumpur<br><input type="checkbox"/> Other                                                         |
| [5] | Perolehan jualan tahunan | <input type="checkbox"/> RM300,000 hingga RM3 juta<br><input type="checkbox"/> RM3 juta hingga RM20 juta<br><input type="checkbox"/> Kurang daripada RM300,000 |                                                                                                                                 |



SCAN ME

|                                                                                          |                                            |                                             |                                                  |
|------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------|--------------------------------------------------|
| *Anda juga boleh mengambil bahagian dalam mengimbas kod QR (Hanya versi Bahasa Inggeris) | <input type="checkbox"/> 5 hingga 30 orang | <input type="checkbox"/> 30 hingga 75 orang | <input type="checkbox"/> Kurang daripada 5 orang |
|------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------|--------------------------------------------------|

## Seksyen B: Mengukur Tahap Pematuhan Halal

| Komponen HCR                                                                                                                                                                                                                     | Skala tindak balas       |                          |                          |                          |                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>Bahagian B1: Pengetahuan mengenai halal dan <i>toyyib</i> (KNW):</b> Bahagian ini adalah untuk mengetahui tahap pengetahuan anda mengenai maksud, permohonan, dan implikasi berkenaan dengan <i>halal</i> dan <i>toyyib</i> . |                          |                          |                          |                          |                          |
| Sebagai pengurus / pemilik restoran, sila nyatakan tahap pengetahuan anda pada perkara berikut daripada skala 5 hingga 1→                                                                                                        | Cemerlang (5)            | Baik (4)                 | Sederhana (3)            | Memuaskan (2)            | Lemah (1)                |
| [7] Pengetahuan tentang maksud halal ditakrifkan dalam MS1500:2019                                                                                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [8] Pengetahuan tentang maksud <i>toyyib</i> ditakrifkan dalam MS1500:2019                                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [9] Aspek <i>toyyiban</i> untuk memastikan kualiti pada mana-mana produk dan perkhidmatan                                                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [10] Pengetahuan tentang halal dan <i>toyyib</i> mencapai integriti halal dan kepercayaan pengguna                                                                                                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [11] Aspek <i>toyyiban</i> berkaitan dengan kelestarian produk dan perkhidmatan                                                                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [12] Pengetahuan halal untuk mengenal pasti bahan-bahan kritikal                                                                                                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                          |                          |                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| dalam penyediaan makanan                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                          |                          |                          |                          |
| [13] Pengetahuan tentang <i>toyyib</i> untuk mengenal pasti titik kritikal (contohnya pengangkutan, penerimaan dan penyimpanan inventori, memproses makanan, bahan mentah, bahan-bahan baru, dan perkhidmatan) dalam rantai penyediaan makanan (dari ladang ke meja makan).                                                                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [14] Pengetahuan untuk mengekalkan sifat-sifat yang baik (contohnya tingkah laku, penampilan, memberi salam dan lain-lain), penyajian (menyajikan makanan (menampilkan keperibadian diri anda, dan mempersembahkan keseluruhan restoran), dan perkhidmatan.                                                                                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Bahagian B2: Tanggungjawab Pengurusan (MGT):</b> Ini merujuk kepada tugas dan tanggungjawab yang memastikan amalan pematuhan halal diikuti dan dilaksanakan di dalam restoran. Contohnya, Ahli Jawatankuasa Halal Dalaman (IHC), melantik pekerja Islam, memberikan latihan halal kepada pekerja, mengatur mesyuarat, melaksanakan audit dalaman, menyediakan kemudahan untuk memenuhi keperluan berasaskan agama, dan sebagainya. |                          |                          |                          |                          |                          |

| Sila nyatakan tahap yang anda ber setuju atau tidak bersetuju pada pernyataan berikut pada skala 5 hingga 1 →                                                                                     | Sangat etuju bersetuju (5) | Bersetuju (4)            | (Pertengahan) Neutral (3) | Tidak bersetuju (2)      | Sangat tidak bersetuju (1) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|
| [15] Pengurusan menitik berat tentang integriti halal terhadap penyediaan makanan (contohnya, pembersihan, penggunaan alat, penggunaan bahan-bahan, proses memasak, menghidangkan, dan lain-lain) | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>   |
| [16] Pengurusan telah membentuk satu unit Ahli Jawatankuasa Halal Dalam (IHC)                                                                                                                     | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>   |
| [17] Tanggungjawab sistem kawalan halal dalaman untuk mengetuai telah diberikan kepada kakitangan yang beragama Islam                                                                             | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>   |
| [18] Pengurusan menguruskan latihan secara berkala untuk memberikan kesedaran halal kepada pekerja                                                                                                | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>   |
| [19] Pengurusan memastikan sumber yang mencukupi (contohnya, tenaga kerja, kemudahan,                                                                                                             | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>   |



|                                                                                                                          |                          |                          |                          |                          |                          |
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| kewangan, dan infrastruktur) untuk melaksanakan sistem kawalan halal dalaman                                             |                          |                          |                          |                          |                          |
| [20] Pengurusan memastikan pekerja yang beragama Islam dibenarkan untuk menunaikan solat                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [21] IHC melibatkan kakitangan dalam proses membuat keputusan berkaitan pengurusan halal                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [22] Mesyuarat secara berkala selalunya diatur oleh ahli jawatankuasa IHC untuk menangani dan menyelesaikan sebarang isu | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Bahagian B3: Premis (PLD): Susun atur, lokasi dan reka bentuk premis.</b>                                             |                          |                          |                          |                          |                          |
| [23] Reka bentuk premis membenarkan aliran proses perkhidmatan yang betul                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [24] Susun atur premis memastikan aliran pekerja yang sistematik                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [25] Reka bentuk susun atur premis memudahkan proses pembersihan yang betul untuk kerja-kerja                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                                                                                                                                             |                                        |                          |                          |                          |                          |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| penyelenggaraan kebersihan                                                                                                                  |                                        |                          |                          |                          |                          |
| [26] Kemudahan kebersihan mesra Muslim (contohnya, tandas mesra air, tempat tadahan, sabun, pengasingan jantina, dan lain-lain) disediakan  | <input type="checkbox"/>               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [27] Ruang khusus untuk solat( <i>solat</i> )disediakan untuk pekerja yang beragama Islam                                                   | <input type="checkbox"/>               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [28] Haiwan peliharaan dan haiwan lain tidak dibenarkan berada di dalam premis                                                              | <input type="checkbox"/>               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [29] Kawasan solat diasingkan dari mana-mana kawasan pemprosesan makanan (Dapur)                                                            | <input type="checkbox"/>               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [30] Premis ini diasingkan secara efektif dan dilindungi dengan baik (sekurang-kurangnya 5km) dari ladang babi atau aktiviti pemprosesannya | <input type="checkbox"/>               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [31] Premis ini tidak memaparkan sebarang tanda, gambar, objek, atau simbol yang bertentangan dengan piawaian halal                         | <input type="checkbox"/>               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Bahagian B4: Kebersihan dan Keselamatan Makanan (HFS)</b>                                                                                |                                        |                          |                          |                          |                          |
|                                                                                                                                             | Jika ya, sila tandakan penggredan anda |                          |                          |                          | Tidak                    |

|                                                                                                                                                                                             |                                                                     |                                                              |                                                                          |                                                                    |                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <p><b>[32]</b> Adakah anda mempunyai Penggredan Amalan Kebersihan Baik(GHP) untuk restoran anda? (Contohnya, A, B, C, atau Tiada Gred (D))</p>                                              | <p>A (5)</p><br><br><br><br><input type="checkbox"/>                | <p>B (4)</p><br><br><br><br><input type="checkbox"/>         | <p>C (3)</p><br><br><br><br><input type="checkbox"/>                     | <p>D (2)</p><br><br><br><br><input type="checkbox"/>               | <p>Permohonan sedang diproses (1)</p><br><br><br><br><input type="checkbox"/> |
| <p><b>[33]</b> Semua peralatan (contohnya, ketuhar, alatan menggoreng, tempat , peti sejuk, peralatan membakar, dan lain-lain) dan peralatan-peralatan dapur = dibersihkan dengan kerap</p> | <p>Sangat bersetuju (5)</p><br><br><br><br><input type="checkbox"/> | <p>Bersetuju (4)</p><br><br><br><br><input type="checkbox"/> | <p>(Pertengahan) Neutral (3)</p><br><br><br><br><input type="checkbox"/> | <p>Tidak bersetuju (2)</p><br><br><br><br><input type="checkbox"/> | <p>Sangat tidak bersetuju (1)</p><br><br><br><br><input type="checkbox"/>     |
| <p><b>[34]</b> Memastikan pengudaraan yang betul untuk meyimpan makanan dengan selamat dan persekitaran yang nyaman di dapur dan kawasan penyimpanan</p>                                    | <input type="checkbox"/>                                            | <input type="checkbox"/>                                     | <input type="checkbox"/>                                                 | <input type="checkbox"/>                                           | <input type="checkbox"/>                                                      |
| <p><b>[35]</b> Meja makan dan kerusi dibersihkan secara berkala bagi tempoh tertentu (contohnya setiap 1 jam 30minit).</p>                                                                  | <input type="checkbox"/>                                            | <input type="checkbox"/>                                     | <input type="checkbox"/>                                                 | <input type="checkbox"/>                                           | <input type="checkbox"/>                                                      |
| <p><b>[36]</b> Terdapat sistem untuk memastikan tiada kebocoran dan paip air tersumbat di dapur dan tandas</p>                                                                              | <input type="checkbox"/>                                            | <input type="checkbox"/>                                     | <input type="checkbox"/>                                                 | <input type="checkbox"/>                                           | <input type="checkbox"/>                                                      |
| <p><b>[37]</b> Langkah kawalan serangga perosak diambil secara</p>                                                                                                                          | <input type="checkbox"/>                                            | <input type="checkbox"/>                                     | <input type="checkbox"/>                                                 | <input type="checkbox"/>                                           | <input type="checkbox"/>                                                      |

|                                                                                                                                                   |                          |                          |                          |                          |                          |
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| berkala untuk menghapuskan kehadiran lipas, semut, lalat, tikus, dan sebagainya.                                                                  |                          |                          |                          |                          |                          |
| [38] Permukaan terlibat secara langsung dalam pemprosesan makanan dibersihkan dengan tuala / tisu bersih setiap kali selesai tugas                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [39] Membasuh bekas tadahan air , tempat duduk tandas, dan lantai tandas dibersihkan dengan kerap                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [40] Barangan pembersihan seperti sabun, mop lantai , pembasmi kuman dan lain-lain disimpan dengan elok dan jauh dari kawasan penyediaan makanan. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [41] Tong sampah dibersihkan dengan kerap                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [42] Terdapat pencahayaan yang mencukupi untuk mengenal pasti ketidakbersihan                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Bahagian B5: Sumber manusia dan budaya</b>                                                                                                     |                          |                          |                          |                          |                          |
| [43] Semua kakitangan mengamalkan kebersihan diri yang baik                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                                                                                                                                                                                                                                           |                          |                          |                          |                          |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| [44] Tata-tertib<br>(contohnya,<br>memberi salam,<br>penampilan pekerja,<br>komunikasi dengan<br>pelanggan) di tempat<br>kerja yang<br>mencerminkan moral<br>budaya Islam di<br>restoran                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [45] Pakaian khusus yang<br>direka disediakan<br>untuk semua<br>kakitangan mengikut<br>garis panduan<br>kementerian<br>Kesihatan Malaysia<br>KKM                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [46] Latihan untuk setiap<br>aspek halal yang<br>terlibat (fail Halal,<br>pengauditan halal<br>dalaman. Pemasaran<br>halal, perkhidmatan<br>hospitaliti halal,<br>bahan-bahan halal,<br>dan lain-lain)<br>disediakan kepada<br>kakitangan | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [47] Semua pengendali<br>makanan telah<br>menerima latihan<br>pengendalian<br>makanan                                                                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Bahagian B6: Penjenamaan, pembungkusan, dan pelabelan (BPL)</b>                                                                                                                                                                        |                          |                          |                          |                          |                          |
| [48] Reka bentuk<br>pembungkusan,<br>tanda, simbol, logo,<br>nama, gambar<br>mematuhi syariat                                                                                                                                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                                                                                                                                                                                          |                                                      |                                       |                                      |                                              |                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------|--------------------------------------|----------------------------------------------|----------------------------------------------------------------------|
| [49] Amalan kebersihan dikekalkan semasa pembungkusan makanan untuk penghantaran ke rumah pelanggan atau ketika mengambil pesanan                                                        | <input type="checkbox"/>                             | <input type="checkbox"/>              | <input type="checkbox"/>             | <input type="checkbox"/>                     | <input type="checkbox"/>                                             |
| [50] Semua aktiviti pemasaran (contohnya, pengagihan 'flyers', pengiklanan media sosial dan lain-lain) adalah mematuhi prinsip syariah                                                   | <input type="checkbox"/>                             | <input type="checkbox"/>              | <input type="checkbox"/>             | <input type="checkbox"/>                     | <input type="checkbox"/>                                             |
| [51] Semua bahan pembungkusan adalah tidak berbahaya dan mematuhi piawaian halal                                                                                                         | <input type="checkbox"/>                             | <input type="checkbox"/>              | <input type="checkbox"/>             | <input type="checkbox"/>                     | <input type="checkbox"/>                                             |
| [52] Pelabelan, maklumat menu dan produk makanan kami memenuhi keperluan pensijilan halal                                                                                                | <input type="checkbox"/>                             | <input type="checkbox"/>              | <input type="checkbox"/>             | <input type="checkbox"/>                     | <input type="checkbox"/>                                             |
| <b>Bahagian B7: Imej dan tahap kepuasan pelanggan (ICS)</b>                                                                                                                              |                                                      |                                       |                                      |                                              |                                                                      |
| [53] Sebagai restoran yang disahkan Halal, adakah anda menjalankan apa-apa kaji selidik mengenai kepuasan pelanggan (contohnya, ulasan dalam talian, atau ulasan daripada pelanggan yang | Jika ya, sila nyatakan tahap kepuasan pelanggan anda |                                       |                                      |                                              | <input type="checkbox"/> Tidak, kami tidak mempunyai sebarang ulasan |
|                                                                                                                                                                                          | <input type="checkbox"/> Sangat berpuas hati         | <input type="checkbox"/> Berpuas hati | <input type="checkbox"/> Pertengahan | <input type="checkbox"/> Kurang berpuas hati | <input type="checkbox"/> Sangat kurang berpuas hati                  |

|                                                                                                                                                    |                                            |                                     |                                      |                                           |                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------------|-----------------------------------------------------|
| 'walk in' (mengunjungi restoren) )?                                                                                                                |                                            |                                     |                                      |                                           |                                                     |
| [54] Berdasarkan kepuasan pelanggan dan perkhidmatan yang diberikan, berapakah skala bintang yang akan diberikan kepada restoran anda?             | <input type="checkbox"/> Lima (5)          | <input type="checkbox"/> Empat (4)  | <input type="checkbox"/> Tiga (3)    | <input type="checkbox"/> Dua (2)          | <input type="checkbox"/> Satu (1)                   |
| [55] Secara keseluruhannya, restoran kami mempunyai imej dan reputasi yang baik dalam negara (iaitu di Malaysia atau dalam kawasan perkhidmatan ). | <input type="checkbox"/> Sangat setuju (5) | <input type="checkbox"/> Setuju (4) | <input type="checkbox"/> Neutral (3) | <input type="checkbox"/> Tidak setuju (2) | <input type="checkbox"/> Sangat tidak bersetuju (1) |
| <b>Bahagian B8: Keperluan undang-undang (LR)</b>                                                                                                   |                                            |                                     |                                      |                                           |                                                     |
| Sila nyatakan pendapat anda pada pernyataan berikut pada skala 5 (sangat bersetuju) kepada 1 (Sangat tidak bersetuju).                             |                                            |                                     |                                      |                                           |                                                     |
| [56] Semua pengendali makanan mempunyai sijil (rekod) vaksin anti-typhoid                                                                          | <input type="checkbox"/> Sangat setuju (5) | <input type="checkbox"/> Setuju (4) | <input type="checkbox"/> Neutral (3) | <input type="checkbox"/> Tidak setuju (2) | <input type="checkbox"/> Sangat tidak bersetuju (1) |
| [57] Dokumen berkaitan pemeriksaan halal disediakan dan diselenggara dengan baik                                                                   | <input type="checkbox"/>                   | <input type="checkbox"/>            | <input type="checkbox"/>             | <input type="checkbox"/>                  | <input type="checkbox"/>                            |
| [58] Pensijilan halal adalah yang terkini                                                                                                          | <input type="checkbox"/>                   | <input type="checkbox"/>            | <input type="checkbox"/>             | <input type="checkbox"/>                  | <input type="checkbox"/>                            |
| [59] Tanda halal dipaparkan di ruangan hadapan restoran                                                                                            | <input type="checkbox"/>                   | <input type="checkbox"/>            | <input type="checkbox"/>             | <input type="checkbox"/>                  | <input type="checkbox"/>                            |

|                                                                                                                                                                                                                                                   |                                                          |                                                                    |                                                                      |                                                                      |                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------|
| <p><b>[60]</b> Penggunaan pensijilan halal dan logo halal yang bersesuaian (contohnya menggunakan logo hanya untuk premis makanan tertentu yang mendapat pensijilan, tiada logo halal pada produk makanan yang belum mendapatkan sijil halal)</p> | <input type="checkbox"/>                                 | <input type="checkbox"/>                                           | <input type="checkbox"/>                                             | <input type="checkbox"/>                                             | <input type="checkbox"/>                                              |
| <p><b>[61]</b> Pernahkah anda melakukan apa-apa jenis kesalahan yang menyalahi undang-undang pensijilan halal?</p>                                                                                                                                | <input type="checkbox"/> Tiada kesalahan sama sekali (5) | <input type="checkbox"/> Kesalahan semasa audit dalaman sahaja (4) | <input type="checkbox"/> Kesalahan kecil yang dikesan oleh JAKIM (3) | <input type="checkbox"/> Kesalahan utama yang dikesan oleh JAKIM (2) | <input type="checkbox"/> Kesalahan serius yang dikesan oleh jakim (1) |
| <p><b>Bahagian B9: Amalan hijau dan kelestarian (GPS)</b></p>                                                                                                                                                                                     |                                                          |                                                                    |                                                                      |                                                                      |                                                                       |
| <p>Sila nyatakan pendapat anda pada pernyataan berikut pada skala 5 (sangat bersetuju) kepada 1 (Sangat tidak bersetuju) →</p>                                                                                                                    | <input type="checkbox"/> Sangat bersetuju (5)            | <input type="checkbox"/> Bersetuju (4)                             | <input type="checkbox"/> Pertengahan Neutral (3)                     | <input type="checkbox"/> Tidak bersetuju (2)                         | <input type="checkbox"/> Sangat tidak bersetuju (1)                   |
| <p><b>[62]</b> Penggunaan air diuruskan dengan baik</p>                                                                                                                                                                                           | <input type="checkbox"/>                                 | <input type="checkbox"/>                                           | <input type="checkbox"/>                                             | <input type="checkbox"/>                                             | <input type="checkbox"/>                                              |
| <p><b>[63]</b> Sisa makanan diminimumkan</p>                                                                                                                                                                                                      | <input type="checkbox"/>                                 | <input type="checkbox"/>                                           | <input type="checkbox"/>                                             | <input type="checkbox"/>                                             | <input type="checkbox"/>                                              |
| <p><b>[64]</b> Produk mesra alam digunakan untuk membersihkan cecair kimia dan penggunaan – penggunaan lain.</p>                                                                                                                                  | <input type="checkbox"/>                                 | <input type="checkbox"/>                                           | <input type="checkbox"/>                                             | <input type="checkbox"/>                                             | <input type="checkbox"/>                                              |



|                                                                                                                                                                                           |                          |                          |                          |                          |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| [65] Penggunaan plastik telah diminimumkan                                                                                                                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [66] Kami memastikan barangan pakai buang (contohnya, kertas tandas, botol kaca, kadbod, kotak kayu, cawan, dan lain-lain) yang digunakan di premis diperbuat daripada bahan kitar semula | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [67] Prinsip 3Rs (Pengurangan, Penggunaan semula, dan kitar semula) diamalkan di restoran kami                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Bahagian B10: Rantaian Pemprosesan Halal (HSC)</b>                                                                                                                                     |                          |                          |                          |                          |                          |
| [68] Kami memastikan rakan kongsi kami telah mendapat pensijilan halal untuk setiap produk / perkhidmatan sebelum bekerjasama dengan mereka                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [69] Kenderaan dikhususkan untuk membawa barangan berkaitan makanan halal sahaja                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [70] Aspek <i>Toyyiban</i> (kesegaran, kualiti, dan lain-lain) dikekalkan semasa pengangkutan bahan-                                                                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                                                                                                                                 |                          |                          |                          |                          |                          |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| bahan mentah seperti sayur-sayuran, perasa, buah-buahan, daging, dan lain-lain .                                                |                          |                          |                          |                          |                          |
| [71] Rekod terperinci ketika tidak menurunkan barang – barang (contohnya, masa, lokasi, orang yang bertanggungjawab) dikekalkan | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [72] Rekod terperinci ketika menurunkan barang –barang (contohnya, lokasi, masa, orang yang bertanggungjawab) dikekalkan        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| [73] Pemandu mematuhi syarat halal dalam menguruskan barang –barang semasa pengangkutan                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Seksyen C: Prestasi Perniagaan

|                                                                                      | Skala tindak balas            |                                |                          |                               |                                        |
|--------------------------------------------------------------------------------------|-------------------------------|--------------------------------|--------------------------|-------------------------------|----------------------------------------|
| Bahagian C1: Prestasi kewangan                                                       |                               |                                |                          |                               |                                        |
|                                                                                      | Sangat<br>berpuas hati<br>(5) | Agak<br>Berpuas<br>hati<br>(4) | Perten-<br>gahan<br>(3)  | Kurang<br>berpuas<br>hati (2) | Sangat<br>tidak<br>berpuas<br>hati (1) |
| [74] Pulangan Ke atas Aset (ROA):<br>Pendapatan bersih ke atas jumlah<br>aset purata | <input type="checkbox"/>      | <input type="checkbox"/>       | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |
| [75] Nisbah Keuntungan Kasar:<br>Keuntungan sebelum cukai ke atas<br>jualan bersih   | <input type="checkbox"/>      | <input type="checkbox"/>       | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |
| [76] Nisbah Keuntungan Bersih:<br>Keuntungan selepas cukai ke atas<br>jualan bersih  | <input type="checkbox"/>      | <input type="checkbox"/>       | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |
| [77] Nisbah Semasa: Aset semasa atas<br>liabiliti semasa                             | <input type="checkbox"/>      | <input type="checkbox"/>       | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |

|                                                                                                                              |                                                                                     |                             |                          |                               |                                        |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------|--------------------------|-------------------------------|----------------------------------------|
| [78] Nisbah hutang: Jumlah liabiliti ke atas jumlah aset                                                                     | <input type="checkbox"/>                                                            | <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |
| <b>Bahagian C2: Prestasi bukan kewangan</b>                                                                                  |                                                                                     |                             |                          |                               |                                        |
| (Sila menilai prestasi anda untuk item no. 78 hingga 82 dalam skala 5 hingga 1)→                                             | Sangat<br>berpuas hati<br>(5)                                                       | Agak<br>Berpuas<br>hati (4) | Tidak<br>pasti<br>(3)    | Kurang<br>berpuas<br>hati (2) | Sangat<br>tidak<br>berpuas<br>hati (1) |
| [79] Tingkat kepuasan pelanggan terhadap perkhidmatan anda<br>(Sila langkau soalan jika anda tidak mempunyai sebarang rekod) | <input type="checkbox"/>                                                            | <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |
| [80] Sejauh manakah anda berpuas hati mampu mengekalkan pelanggan                                                            | <input type="checkbox"/>                                                            | <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |
| [81] Tahap kepuasan masa menunggu oleh pelanggan<br>(Sila langkau soalan jika anda tidak mempunyai sebarang rekod)           | <input type="checkbox"/>                                                            | <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |
| Sila menilai prestasi perniagaan anda untuk dua item berikut pada skala 5 hingga 1                                           | Jauh lebih baik daripada pesaing (5) ke ..... Jauh lebih buruk daripada pesaing (1) |                             |                          |                               |                                        |
|                                                                                                                              | 5                                                                                   | 4                           | 3                        | 2                             | 1                                      |
| [82] Inovasi produk (ini bermakna anda sentiasa menawarkan hidangan baru dalam senarai menu)                                 | <input type="checkbox"/>                                                            | <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |
| [83] Kedudukan kompetitif (ini bermakna produk anda unik dan tidak boleh diakses di restoran lain)                           | <input type="checkbox"/>                                                            | <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/>               |

Terima kasih kerana meluangkan masa berharga anda dan sumbangan akan penyelidikan ini.

Yang ikhlas

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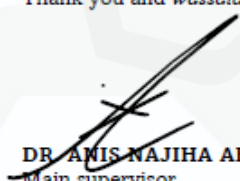
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### APPENDIX III: LIST OF EXPERTS PARTICIPATED IN AHP SURVEY

| No | Name of experts                      | Affiliation                                          | Type of participation               |                                       |                                           |
|----|--------------------------------------|------------------------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------------|
|    |                                      |                                                      | HCR component selection             | Pairwise comparison of HCR components | Pairwise comparison of rating intensities |
| 1. | Dr. Zalina Binti Zakaria             | Director, University of Malaya Halal Research Centre | <input checked="" type="checkbox"/> | <input type="checkbox"/>              | <input type="checkbox"/>                  |
| 2. | Dr. Khairusy Syakirin Has-Yun Hashim | Assistant Professor, KAED, IIUM                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>   | <input type="checkbox"/>                  |
| 3. | Dr Muhamad Shirwan Abdullah Sani     | Assistant Professor, INHART, IIUM                    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>   | <input type="checkbox"/>                  |
| 4. | Dr Betania Kartika                   | Associate Professor, INHART, IIUM                    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>   | <input checked="" type="checkbox"/>       |
| 5. | Dr. Nurul Nadia Ramli                | Assistant Professor, UPM                             | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>   | <input checked="" type="checkbox"/>       |
| 6. | Dr Nathasa Mazna binti Ramli         | Associate Professor, USIM                            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>   | <input type="checkbox"/>                  |
| 7. | Dr Nitty Hirawaty Binti Kamarulzaman | Associate Professor, UPM                             | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>   | <input checked="" type="checkbox"/>       |
| 8. | Dr Shuhaimi Bin Mustafa              | Professor, UPM                                       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>   | <input checked="" type="checkbox"/>       |
| 9. | Dr Suharni Binti Maulan              | Assistant Professor, KENMS, IIUM                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>   | <input type="checkbox"/>                  |

|     |                                        |                                                                             |                                     |                                     |                                     |
|-----|----------------------------------------|-----------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 10. | Dr Mohammad Aizat Bin Jamaludin        | Associate Professor, INHART, IIUM                                           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 11. | Dr Nurrulhidayah Binti Ahmad Fadzillah | Associate Professor, INHART, IIUM                                           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. | Dr Mira Kartiwi                        | Associate Professor, KICT, IIUM                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 13. | Nazrizal Mat Noh                       | Assistant Vice President, CGC Malaysia Bhd                                  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 14. | Zulfikar Hashman Jamalkhir             | Senior Vice President, Alliance Islamic Bank Bhd                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 15. | Mohd Roslan Bin Mohd Saludin           | General Manager, QSR Brands (M) Holdings Sdn. Bhd                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 16. | Dr Yus Anizah                          | Professor and Deputy Director, Halal Products Research Institute, UPM       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 17. | Fauzi Yusoff                           | Director and Design consultant (Halal branding and Design), Kuala Lumpur    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 18. | Mahpudz Shariff                        | Food Technologist (Halal coordinator), Sime Darby Oils Professional Sdn Bhd | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 19. | Md Ashraful Alam                       | Quality Control Officer; Pran Food and Beverages, Malaysia                  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

## APPENDIX IV: SURVEY APPROVAL LETTER

|  <b>الجامعة الإسلامية العالمية ماليزيا</b><br><b>INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA</b><br><small>Garden of Knowledge and Virtue</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | <b>LEADING THE WAY</b><br><small>KHAIRAH - AMANAH - IGHRA - SAHMATAN UL-ILAHIN</small>                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | <b>SUSTAINABILITY INSTITUTION OF THE YEAR</b>                                                                                                                                                                                                                                                                                                                                                                                                          |
| Our reference: IIUM/516/14/13<br>Date : 1 June 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>Assalamualaikum wrt. wbt.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Dear Mr./Mrs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>APPROVAL LETTER TO CONDUCT SURVEY</b><br><b>RE: MD SIDDIQUE E AZAM (Passport: A00925139)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| May this letter reach you while you are in the best of health and circumstances.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>I, Asst. Prof. Dr. Anis Najiha Ahmad, hereby verify that Md Siddique E Azam (Passport No. A00925139) is a Ph.D. candidate at the International Institute for Halal Research and Training (INHART). Md Siddique E Azam is under my supervision, and he is currently conducting a research entitled "Developing and Validating Halal Compliance Rating as a Performance Appraisal Tool for Halal Certified SMEs in Malaysia."</p> <p>The objective of his research is to develop and validate a rating tool to measure the halal compliance level of restaurants in Malaysia. As part of the instrument validation, he is required to collect valuable responses from the managers and/or owners of halal-certified restaurants across Malaysia.</p> <p>We appreciate your sincere support in investing time in the survey. We are sure that your insight on Halal compliance will be valuable to our research and later to the halal industry.</p> <p>Should you have any doubts or need any clarification, please do not hesitate to contact me.</p> <p>Thank you and <i>wassalam</i>.</p> <p><br/><b>DR. ANIS NAJIHA AHMAD</b><br/>Main supervisor,<br/>Assistant Professor<br/>International Institute for Halal Research and Training (INHART)</p> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <small>INTERNATIONAL INSTITUTE FOR HALAL RESEARCH AND TRAINING (INHART)<br/>Level 2, KICT Building, International Islamic University Malaysia, Jalan Gombak, 52100 Kuala Lumpur<br/>Mailing Address: Level 2, KICT Building, International Islamic University Malaysia, P.O. Box 10, 50728 Kuala Lumpur, Malaysia<br/>(Company No: 101047-P)<br/>Tel: +602 6401 (Ext: 3390/3395) Email: inhart@iiu.edu.my</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | <br><br><br><br> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                                                                                                                                   |

## APPENDIX V: AHP QUESTIONNAIRE (MS EXCEL TOOL)

### AHP Analytic Hierarchy Process

n= 10

Input 1

Objective: To prioritise the components of best halal compliance practice by Halal Restaurants in Malaysia

**Only input data in the light green fields!**

Please compare the importance of the elements in relation to the objective and fill in the table: Which element of each pair is more important, **A or B**, and **how much** more on a scale 1-9 as given below.

**Once completed, you might adjust highlighted comparisons 1 to 3 to improve consistency.**

| n  | components | Comment                           | RGMM  | +/-   |
|----|------------|-----------------------------------|-------|-------|
| 1  | KNW        | Knowledge on halal and toyyib     | 12.7% | 4.9%  |
| 2  | MGT        | Management responsibility         | 24.1% | 10.0% |
| 3  | PLD        | Premise location and design       | 1.6%  | 0.7%  |
| 4  | HFS        | Hygiene and food safety           | 22.3% | 8.6%  |
| 5  | HRC        | Human resources and culture       | 4.1%  | 1.6%  |
| 6  | BPL        | Branding, packaging and labelling | 3.6%  | 1.8%  |
| 7  | ICS        | Image and customer satisfaction   | 2.7%  | 1.2%  |
| 8  | LR         | Legal requirements                | 6.8%  | 3.3%  |
| 9  | GPS        | Green practice and sustainability | 8.6%  |       |
| 10 | HSC        | Halal supply chain                | 13.5% | 3.7%  |

Dr. Nitty 1 12-10-20  $\alpha$ : 0.1 CR: 7%

Name Weight Date Consistency Ratio

| i | j  | A   | components | B   | more important ? | A or B | Scale (1-9) |
|---|----|-----|------------|-----|------------------|--------|-------------|
| 1 | 2  | KNW |            | MGT |                  | B      | 3           |
| 1 | 3  |     |            | PLD |                  | A      | 9           |
| 1 | 4  |     |            | HFS |                  | B      | 3           |
| 1 | 5  |     |            | HRC |                  | A      | 5           |
| 1 | 6  |     |            | BPL |                  | A      | 7           |
| 1 | 7  |     |            | ICS |                  | A      | 3           |
| 1 | 8  |     |            | LR  |                  | A      | 2           |
| 2 | 3  | MGT |            | PLD |                  | A      | 9           |
| 2 | 4  |     |            | HFS |                  | A      | 1           |
| 2 | 5  |     |            | HRC |                  | A      | 5           |
| 2 | 6  |     |            | BPL |                  | A      | 5           |
| 2 | 7  |     |            | ICS |                  | A      | 5           |
| 2 | 8  |     |            | LR  |                  | A      | 7           |
| 3 | 4  | PLD |            | HFS |                  | B      | 7           |
| 3 | 5  |     |            | HRC |                  | B      | 3           |
| 3 | 6  |     |            | BPL |                  | B      | 5           |
| 3 | 7  |     |            | ICS |                  | B      | 2           |
| 3 | 8  |     |            | LR  |                  | B      | 7           |
| 4 | 5  | HFS |            | HRC |                  | A      | 9           |
| 4 | 6  |     |            | BPL |                  | A      | 7           |
| 4 | 7  |     |            | ICS |                  | A      | 7           |
| 4 | 8  |     |            | LR  |                  | A      | 2           |
| 5 | 6  | HRC |            | BPL |                  | B      | 1           |
| 5 | 7  |     |            | ICS |                  | B      | 1           |
| 5 | 8  |     |            | LR  |                  | B      | 1           |
| 6 | 7  | BPL |            | ICS |                  | A      | 3           |
| 6 | 8  |     |            | LR  |                  | B      | 3           |
| 7 | 8  | ICS |            | LR  |                  | B      | 5           |
| 1 | 9  | KNW |            | GPS |                  | A      | 2           |
| 1 | 10 |     |            | HSC |                  | B      | 1           |
| 2 | 9  | MGT |            | GPS |                  | A      | 3           |
| 2 | 10 |     |            | HSC |                  | A      | 3           |
| 3 | 9  | PLD |            | GPS |                  | B      | 7           |
| 3 | 10 |     |            | HSC |                  | B      | 5           |
| 4 | 9  | HFS |            | GPS |                  | A      | 3           |
| 4 | 10 |     |            | HSC |                  | A      | 2           |
| 5 | 9  | HRC |            | GPS |                  | A      | 1           |
| 5 | 10 |     |            | HSC |                  | B      | 3           |
| 6 | 9  | BPL |            | GPS |                  | B      | 5           |
| 6 | 10 |     |            | HSC |                  | B      | 5           |
| 7 | 9  | ICS |            | GPS |                  | B      | 5           |
| 7 | 10 |     |            | HSC |                  | B      | 5           |
| 8 | 9  | LR  |            | GPS |                  | B      | 2           |
| 8 | 10 |     |            | HSC |                  | B      | 4           |
| 9 | 10 | GPS |            | HSC |                  | B      | 3           |

| Intensity of importance                            | Definition             | Explanation                                                                                    |
|----------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------|
| 1                                                  | Equal importance       | Two elements contribute equally to the objective                                               |
| 3                                                  | Moderate importance    | Experience and judgment slightly favor one element over another                                |
| 5                                                  | Strong Importance      | Experience and judgment strongly favor one element over another                                |
| 7                                                  | Very strong importance | One element is favored very strongly over another, its dominance is demonstrated in practice   |
| 9                                                  | Extreme importance     | The evidence favoring one element over another is of the highest possible order of affirmation |
| 2,4,6,8 can be used to express intermediate values |                        |                                                                                                |

## INDEX

|                                                                                                                                                                                |                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Analytic Hierarchy Processxxxv, 15, 16,<br>20, 50, 56, 57, 87, 122, 126, 142, 226,<br>265, 269, 272, 279, 282, 284                                                             | Green practicexxvi, 17, 49, 76, 85, 101,<br>106, 124, 170, 171, 188, 222, 230,<br>299 |
| Average Variance Extracted ..... 117                                                                                                                                           | Halal ..... 25                                                                        |
| BeSS certification ..... 40                                                                                                                                                    | Halal F&B industry ..... 28                                                           |
| Brandingxxv, 17, 48, 75, 85, 101, 105,<br>123, 164, 165, 187, 222, 228, 298                                                                                                    | Halal industry ..... 27                                                               |
| Business performancexxv, 67, 75, 101,<br>102, 178, 186                                                                                                                         | Halal Management..... 6, 9, 38, 39, 63                                                |
| Business profile..... 148                                                                                                                                                      | Halal restaurants ..... 29                                                            |
| Chapter Outlines ..... 21                                                                                                                                                      | HCR components..... 84                                                                |
| Coefficient of determination... 119, 214                                                                                                                                       | heterotrait-monotrait..... 118, 202, 206                                              |
| components ..... 46                                                                                                                                                            | Hierarchy construct ..... 89, 125                                                     |
| composite reliability..... 117, 205, 236                                                                                                                                       | Hotel Rating..... 8, 38, 51, 262                                                      |
| conceptual research model ..... 74                                                                                                                                             | Human resources ..... 162                                                             |
| Conclusion ..... 245                                                                                                                                                           | Hygiene..... 159                                                                      |
| Consistency Index ..... 97                                                                                                                                                     | judgemental sampling..... 86                                                          |
| Consistency Ratio ..... 97                                                                                                                                                     | Knowledge..... 150                                                                    |
| Construct validity..... 117, 200                                                                                                                                               | legal requirements2, 52, 168, 169, 230,<br>299                                        |
| convergent validity.. 117, 200, 201, 223                                                                                                                                       | Limitations..... 248                                                                  |
| customer satisfaction 13, 17, 48, 68, 73,<br>74, 76, 85, 101, 102, 103, 105, 124,<br>166, 167, 181, 182, 185, 186, 187,<br>222, 229, 240, 246, 247, 265, 276,<br>283, 298, 301 | Linguistic expression..... 61, 64                                                     |
| Data collection ..... 113                                                                                                                                                      | Literature Review ..... 25                                                            |
| Definition ..... 32                                                                                                                                                            | location ..... 109                                                                    |
| discriminant validity21, 117, 118, 200,<br>201, 202, 203, 204, 206, 223, 236,<br>267, 285                                                                                      | Malaysian Standard ..... 4, 35                                                        |
| Discussion ..... 148, 227, 231, 233, 235                                                                                                                                       | Management ..... 153                                                                  |
| ethical..... 120                                                                                                                                                               | Measurement model ..... 116                                                           |
| Experts ..... 86                                                                                                                                                               | Measurement Model..... 189, 260                                                       |
| Factor loadings..... 116, 192                                                                                                                                                  | measuring scale ..... 100                                                             |
| financial performance7, 17, 18, 68, 69,<br>70, 71, 72, 73, 75, 76, 102, 103, 178,<br>181, 182, 184, 186, 188, 222, 223,<br>236, 243, 244, 246, 256, 270, 276,<br>278, 283, 301 | methodology ..... 78                                                                  |
| flowchart ..... 114                                                                                                                                                            | Model fit ..... 213                                                                   |
| Fornell-Larcker ..... 118, 202, 224, 268                                                                                                                                       | Multicollinearity test ..... 117, 195                                                 |
| Future research..... 252                                                                                                                                                       | multi-criteria decision..... 50                                                       |
| Gender..... 146                                                                                                                                                                | Muslim Friendlyxxvii, 38, 51, 66, 261,<br>262                                         |
| global weight..... 136                                                                                                                                                         | non-financial ..... 73                                                                |
| Grading criteria ..... 64                                                                                                                                                      | non-financial performance7, 74, 75,<br>184, 186, 243, 244                             |
|                                                                                                                                                                                | pair-wise comparison..... 57, 82, 86, 88                                              |
|                                                                                                                                                                                | path coefficients120, 208, 210, 224,<br>246                                           |
|                                                                                                                                                                                | Performance appraisal ..... 49                                                        |
|                                                                                                                                                                                | Performance evaluation ..... 42                                                       |
|                                                                                                                                                                                | pilot study ..... 112                                                                 |
|                                                                                                                                                                                | Policy ..... 251                                                                      |
|                                                                                                                                                                                | population ..... 107                                                                  |
|                                                                                                                                                                                | Predictive relevance..... 119, 214, 215                                               |



|                           |                                           |                           |                                                                                                                                                                   |
|---------------------------|-------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Premise.....              | 156                                       | Standard deviation .....  | 115                                                                                                                                                               |
| Problem Statement .....   | 11                                        | State .....               | 145                                                                                                                                                               |
| profile.....              | 99                                        | strategy and design ..... | 81                                                                                                                                                                |
| Random Index.....         | 98                                        | structural model.....     | 21, 23, 77, 116, 118,<br>119, 188, 189, 207, 208, 210, 214,<br>215, 217, 218, 219, 223, 224, 225,<br>236, 247                                                     |
| Recommendations.....      | 251                                       | supply chain .....        | 17, 41, 44, 49, 59, 60, 76,<br>86, 101, 106, 124, 151, 152, 172, 173,<br>188, 222, 230, 231, 242, 249, 253,<br>270, 273, 280, 285, 292, 294, 300                  |
| Reliability .....         | 117, 198, 201, 205, 206,<br>265, 271      | sustainability .....      | 2, 8, 9, 17, 19, 26, 27, 38,<br>49, 50, 54, 59, 67, 76, 85, 87, 101,<br>106, 124, 151, 152, 170, 171, 188,<br>222, 230, 241, 247, 272, 273, 276,<br>289, 294, 299 |
| Religion.....             | 146                                       | <i>Toyyiban</i> .....     | 27                                                                                                                                                                |
| research hypothesis ..... | 17                                        | weighted average.....     | 22, 25, 50, 52, 54, 56,<br>266, 278                                                                                                                               |
| research objective.....   | 15                                        |                           |                                                                                                                                                                   |
| research question.....    | 15                                        |                           |                                                                                                                                                                   |
| restaurant rating .....   | 64                                        |                           |                                                                                                                                                                   |
| Saaty Scale .....         | 89                                        |                           |                                                                                                                                                                   |
| sample size .....         | 111                                       |                           |                                                                                                                                                                   |
| sampling.....             | 110                                       |                           |                                                                                                                                                                   |
| Scope of the Study .....  | 19                                        |                           |                                                                                                                                                                   |
| Significance.....         | 18                                        |                           |                                                                                                                                                                   |
| SRMR .....                | 120, 208, 214, 216, 224, 236,<br>246, 279 |                           |                                                                                                                                                                   |

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