



**PROF. MADYA DR. SITI
RAIHANA BINTI HAMZAH**

PENSYARAH UNIVERSITI DS14

CONTACT

Phone: 067988784

E-mail:

sraihana@usim.edu.my

Faculty: Fakulti Sains
Dan Teknologi

SUPERVISION

PhD - Completed: 0, Ongoing: 1

Master - Completed: 5,
Ongoing: 1

AREAS OF EXPERTISE

Financial Mathematics

Islamic Finance

Financial Literacy

ACADEMIC QUALIFICATION

PhD in Islamic Finance (2015)

Master in Matematik (2009)

Bachelor in Matematik (2008)

Diploma in Computer Science (2005)

RESEARCH

1. BALANCING EQUITY AND SUSTAINABILITY: MODELLING HAJJ SUBSIDY FRAMEWORK TO OVERCOME THE CLIFF EFFECT

2026 GERAN PENYELIDIKAN FUNDAMENTAL ON GOING CO-RESEARCHER

2. DEVELOPING A NEW CREDIT RISK EXPOSURE MODEL TO ILLUSTRATE FINANCIAL SUSTAINABILITY OPTION FOR CORPORATE FINANCING BY USING MONTE CARLO SIMULATION.

2023 GERAN KPT ON GOING MAIN RESEARCHER

3. NUMERICAL APPROACH FOR ANALYZING ASSET PRICES

2023 GERAN ANTARABANGSA ON GOING CO-RESEARCHER

4. MODELLING THE MULTI-SCALE CURRENCY EXPOSURE USING WAVELET TECHNIQUE FOR OPTIMAL HEDGING STRATEGIES AMONG NON-FINANCIAL FIRMS IN MALAYSIA

2020 GERAN KPT COMPLETED CO-RESEARCHER

**5. DEVELOPING A NEW EQUITY-BASED FINANCING MODEL
BY USING EQUILIBRIUM FORMULATION TOWARDS
ACHIEVING LONG-TERM SUSTAINABLE FINANCE.**

2019 GERAN KPT COMPLETED MAIN RESEARCHER

RESEARCH

6. EMPIRICAL ANALYSIS OF RISK SHIFTING AND RISK SHARING IN BONDS AND SUKUK : APPLICATION TO CROWDFUNDING

2017 GERAN ANTARABANGSA COMPLETED MAIN RESEARCHER

7. THE STOCHASTIC ASSET INVESTMENT MODEL FOR INSURER

2017 GERAN PENYELIDIKAN USIM COMPLETED CO-RESEARCHER

8. NUMERICAL SOLUTION FOR ISLAMIC PRICING OPTION USING A MODIFIED 2 POINT BLOCK BACKWARDS DIFFERENCE METHOD

2017 GERAN KPT COMPLETED CO-RESEARCHER

9. EMPIRICAL EVIDENCE OF RISK SHIFTING IN BONDS AND SUKUK

2016 GERAN PENYELIDIKAN TRANSLASIONAL COMPLETED MAIN RESEARCHER

PUBLICATION

1. EQUITY-BASED FINANCING AND CREDIT RISK: A MONTE CARLO ANALYSIS OF ECONOMIC CRISES IN MALAYSIA

MALAYSIAN JOURNAL OF SCIENCE, HEALTH & TECHNOLOGY

2025 JOURNAL OTHER DATABASE CORRESPONDING AUTHOR

2. THE IMPACT OF CAPITAL MARKET INSTRUMENTS ON MALAYSIAN ECONOMIC GROWTH

MALAYSIAN JOURNAL OF SCIENCE, HEALTH AND TECHNOLOGY

2025 JOURNAL OTHER DATABASE MAIN AUTHOR

3. CASH TRAIL ADVENTURE: GAMIFIED LEARNING FOR NUMERACY, FINANCIAL LITERACY, AND ISLAMIC FINANCE IN THE 4IR ERA

NATIONAL CONFERENCE ON EDUCATION AND NEW LEARNING TECHNOLOGIES 2025 (NCENT 2025)

2025 PROCEEDING NON-INDEX MAIN AUTHOR

4. IMPROVING FINANCIAL WELL-BEING FOR MALAYSIA'S B40: LITERACY, STRESS, AND POLICY IMPLICATIONS

PERSIDANGAN KEBANGSAAN EKONOMI MALAYSIA KE 17

2025 PROCEEDING NON-INDEX CO-AUTHOR

5. BLUEPRINT ISLAMIC FINANCE UNIVERSITI SAINS ISLAM MALAYSIA

2025 BOOK

6. ANALYZING MALAYSIAN STOCK INDICES PERFORMANCE USING ARIMA

DIGITAL HORIZONS: REIMAGINING BUSINESS IN THE TECH ERA

2025 CHAPTER IN BOOK CO-AUTHOR

7. FINANCIAL LITERACY AND FINANCIAL ANXIETY IN MALAYSIA: DETERMINANTS AND BEHAVIOURAL INFLUENCES

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN EDUCATION AND SOCIETY

2024 JOURNAL OTHER DATABASE MAIN AUTHOR

8. COVID-19 FINANCIAL RELIEF SCHEME: AN ANALYSIS OF FINANCIAL LITERACY AND FINANCIAL ANXIETY AMONG MALAYSIAN POPULATION

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN ECONOMICS AND FINANCE

2024 JOURNAL OTHER DATABASE CORRESPONDING AUTHOR

9. THE ANALYSIS OF FINANCIAL LITERACY THAT INFLUENCES FINANCIAL ANXIETY AMONG MALAYSIANS

5TH INTERNATIONAL CONFERENCE ON MANAGEMENT, EDUCATION, SOCIAL SCIENCES AND INNOVATION 2024

2024 PROCEEDING NON-INDEX MAIN AUTHOR

10. MEAN-VARIANCE ANALYSIS OF SHARIAH AND NON-SHARIAH STOCKS MARKET IN MALAYSIA DURING THE PANDEMIC OF COVID-19

29TH NATIONAL SYMPOSIUM ON MATHEMATICAL SCIENCES (SKSM29)

2024 PROCEEDING NON-INDEX MAIN AUTHOR

11. THE IMPACT OF CAPITAL MARKET INSTRUMENTS ON MALAYSIAN ECONOMIC GROWTH

KOLOKIUIM SISWAZAH SAINS & TEKNOLOGI (KOSIST2024)

2024 PROCEEDING NON-INDEX CO-AUTHOR

12. PROCEEDING OF THE 29TH NATIONAL SYMPOSIUM ON MATHEMATICAL SCIENCES (SKSM29): THEORY AND APPLICATIONS OF MATHEMATICAL SCIENCES

SIMPOSIUM KEBANGSAAN SAINS MATEMATIK (SKSM29)

2024 PROCEEDING NON-INDEX CHIEF EDITOR

13. TIME SCALE DEPENDENCIES OF CURRENCY RISK: A CASE STUDY OF HEALTHCARE FIRMS IN MALAYSIA

SIMPOSIUM KEBANGSAAN SAINS MATEMATIK KALI KE-30

2024 PROCEEDING NON-INDEX MAIN AUTHOR

PUBLICATION

14. FINANCIAL SUSTAINABILITY OF A FIRM: DEBT-BASED OR EQUITY-BASED FINANCING TO PURSUE

JOURNAL OF ISLAMIC MONETARY ECONOMICS AND FINANCE

2023 JOURNAL SCOPUS CO-AUTHOR

15. A GEOMETRIC BROWNIAN MOTION OF ASEAN-5 STOCK INDEXES

AI AND BUSINESS, AND INNOVATION RESEARCH: UNDERSTANDING THE POTENTIAL AND RISKS OF AI FOR MODERN ENTERPRISES

2023 CHAPTER IN BOOK CO-AUTHOR

16. A BACKWARD DIFFERENCE FORMULATION FOR ANALYZING THE DYNAMICS OF CAPITAL STOCKS

MATHEMATICAL MODELING AND COMPUTING,

2022 JOURNAL SCOPUS CO-AUTHOR

17. STOCK RETURN VOLATILITY DURING SARS AND COVID-19: COMPARISON BETWEEN MALAYSIA AND CHINA'S STOCK MARKETS

THE 5TH INNOVATION AND ANALYTICS CONFERENCE & EXHIBITION (IACE 2021)

2022 PROCEEDING SCOPUS MAIN AUTHOR

18. SIMULATION ON CAPITAL FINANCING FOR CORPORATIONS AND ITS CREDIT EXPOSURE

THE 5TH INNOVATION AND ANALYTICS CONFERENCE & EXHIBITION (IACE 2021)

2022 PROCEEDING SCOPUS MAIN AUTHOR

19. MEAN-VARIANCE ANALYSIS OF SHARIAH AND NON- SHARIAH STOCKS MARKET IN MALAYSIA DURING THE PANDEMIC OF COVID-19

SIMPOSIUM KEBANGSAAN SAINS MATEMATIK KE-29 (SKSM29)

2022 PROCEEDING SCOPUS CORRESPONDING AUTHOR

20. TWO-POINT BLOCK VARIABLE ORDER STEP SIZE MULTISTEP METHOD FOR SOLVING HIGHER ORDER ORDINARY DIFFERENTIAL EQUATIONS DIRECTLY

JOURNAL OF KING SAUD UNIVERSITY - SCIENCE

2021 JOURNAL SCOPUS CO-AUTHOR

21. FORECASTING NESTLE STOCK PRICE BY USING BROWNIAN MOTION MODEL DURING PANDEMIC COVID-19

MALAYSIAN JOURNAL OF SCIENCE, HEALTH & TECHNOLOGY

2021 JOURNAL MYCITE MAIN AUTHOR / CONTACT PERSON IN USIM

22. APPROXIMATING NON LINEAR HIGHER ORDER ODES BY A THREE POINT BLOCK ALGORITHM

PLOS ONE

2021 JOURNAL ISI, SCOPUS AND ERA CO-AUTHOR

23. THE IMPACT OF COVID-19 PANDEMIC ON UNEMPLOYMENT RATES IN MALAYSIA: COMPARATIVE APPROACH WITH GLOBAL FINANCIAL CRISIS 2007/2008.

INTERNATIONAL MANAGEMENT & ACCOUNTING CONFERENCE (IMAC) 10 REVISITING BUSINESS AND ACCOUNTING PERSPECTIVE IN NEW ERA

2021 PROCEEDING NON-INDEX MAIN AUTHOR

24. PERFORMANCE AND VOLATILITY MODELLING FOR SHARIAH COMPLIANT STOCKS IN MALAYSIA USING EXPONENTIALLY WEIGHTED MOVING AVERAGE

MALAYSIAN JOURNAL OF SCIENCE HEALTH & TECHNOLOGY

2020 JOURNAL OTHERS DATABASE CO-AUTHOR

25. NUMERICAL APPROXIMATION OF RICCATI TYPE DIFFERENTIAL EQUATIONS

ASM SCIENCE JOURNAL

2020 JOURNAL SCOPUS CO-AUTHOR

26. FACTOR ANALYSIS ON FINANCIAL RATIOS TO DETERMINE FINANCIAL DISTRESS OF ISLAMIC BANKS IN MALAYSIA

3RD UUM INTERNATIONAL ISLAMIC BUSINESS MANAGEMENT CONFERENCE 2020 (IBMC 2020)

2020 PROCEEDING NON-INDEX MAIN AUTHOR

PUBLICATION

27. PERFORMANCE AND VOLATILITY MODELLING FOR SHARIAH COMPLIANT STOCKS IN MALAYSIA USING EXPONENTIALLY WEIGHTED MOVING AVERAGE

KOLOKIUIM SISWAZAH FAKULTI SAINS DAN TEKNOLOGI 2020

2020 PROCEEDING NON-INDEX CO-AUTHOR

28. DOWNSIDE BETA MODELLING FOR SHARIAH COMPLIANT, CONVENTIONAL AND BITCOIN INDICES AS A PROXY FOR MALAYSIA

ISLAMIC BANKING, ACCOUNTING AND FINANCE INTERNATIONAL CONFERENCE? THE 9TH IBAF 2020

2020 PROCEEDING NON-INDEX CO-AUTHOR

29. ANALYSIS OF THE RISK OF FAILURE IN SUKUK PORTFOLIOS

HANDBOOK OF ANALYTICAL STUDIES IN ISLAMIC FINANCE & ECONOMICS

2020 CHAPTER IN BOOK MAIN AUTHOR

30. SOLVING DUFFING TYPE DIFFERENTIAL EQUATIONS USING A THREE-POINT BLOCK VARIABLE ORDER STEP SIZE METHOD.

JOURNAL OF PHYSICS: CONFERENCE SERIES

2019 JOURNAL SCOPUS CO-AUTHOR

31. SOLUTION FOR NONLINEAR RICCATI EQUATION BY BLOCK METHOD

AIP CONFERENCE PROCEEDINGS

2018 JOURNAL SCOPUS CO-AUTHOR

32. RISK SHIFTING ELIMINATION AND RISK SHARING EXPOSURE IN EQUITY-BASED FINANCING.

MANAGERIAL FINANCE

2018 JOURNAL SCOPUS MAIN AUTHOR

33. EMPIRICAL EVIDENCE OF RISK SHIFTING IN BONDS AND DEBT-BASED SUKUK: THE CASE OF MALAYSIAN CORPORATIONS

JOURNAL OF ISLAMIC ACCOUNTING AND BUSINESS RESEARCH

2018 JOURNAL SCOPUS MAIN AUTHOR

34. VARIABLE ORDER VARIABLE STEPSIZE ALGORITHM FOR SOLVING NONLINEAR DUFFING OSCILLATOR.

JOURNAL OF PHYSICS: CONFERENCE SERIES

2017 JOURNAL OTHER DATABASE CO-AUTHOR

35. EQUITY-BASED FINANCING: CAN THE INSTRUMENT SURVIVE AS A RISK SHARING INSTRUMENT?

MALAYSIAN FINANCE ASSOCIATION 2017 (MFAC 2017)

2017 PROCEEDING NON-INDEX MAIN AUTHOR

36. DEBTS AND DEBT-BASED SUKUK RELATED TO RISK SHIFTING BEHAVIOR

ECONOMICS AND ENGINEERING

2016 JOURNAL OTHER DATABASE MAIN AUTHOR

37. DEBTS AND DEBT-BASED SUKUK RELATED TO RISK SHIFTING BEHAVIOR

18TH INTERNATIONAL CONFERENCE ON ISLAMIC BANKING, FINANCE AND COMMERCE.

2016 PROCEEDING NON-INDEX MAIN AUTHOR

38. ABSENCE OF LOCALIZATION OF FOURIER-LAPLACE SERIES

4TH INTERNATIONAL CONFERENCE ON MATHEMATICAL SCIENCES (ICMS4)

2016 PROCEEDING NON-INDEX CO-AUTHOR

AWARDS/RECOGNITION

1. 3RD PRIZE IN 3RD INTERNATIONAL ARTICLE WRITING COMPETITION 2025

2025 INTERNATIONAL

2. INDUSTRIAL ATTACHMENT

2025 NATIONAL

3. BEST FINAL YEAR PROJECT

2025 OTHERS

4. ANUGERAH PEMFAILAN HARTA INTELEK

2025 UNIVERSITY

5. ANUGERAH PENERBITAN PROSIDING BERINDEKS

2025 UNIVERSITY

6. ANUGERAH PENERBITAN BAB DALAM BUKU

2025 UNIVERSITY

7. ANUGERAH PENERBITAN JURNAL BERINDEKI

2025 UNIVERSITY

8. MARKAH E-PRESTASI CEMERLANG ABOVE 95% 2024

2025 UNIVERSITY

9. ACADEMIC ADVISOR

MALAYSIAN MINISTRY OF HIGHER EDUCATION & THE AUSTRALIAN HIGH COMMISSION

2025 INTERNATIONAL

10. TRAINER / FACILITATOR

INTERNATIONAL TECHNOLOGY BOOTCAMP 2025

2025 INTERNATIONAL

11. STOCK SAVVY SCHOOL SQUAD (4S): EMPOWERING YOUTH FOR FINANCIAL FUTURES THROUGH GAMIFIED INVESTMENT LITERACY

7th International Putra Innocreative Carnival in Teaching and Learning (I-PICTL2025)

2025 ANTARABANGSA GOLD

12. CASH TRAIL ADVENTURE: BUILDING FINANCIAL LITERACY, NUMERACY SKILLS, AND ETHICAL DECISION-MAKING FOR LEARNERS OF ALL AGES.

International Education Innovation Competition (Edu@Innovate 2025)

2025 ANTARABANGSA GOLD

13. ANUGERAH SANJUNGAN PERSAMA

2024 INTERNATIONAL

14. BEST FINAL YEAR PROJECT

2024 UNIVERSITY

AWARDS/RECOGNITION

15. ANUGERAH E-NILAI TERBAIK

2024 UNIVERSITY

16. ANUGERAH PENYELIA TERBILANG

2024 UNIVERSITY

17. ANUGERAH PENERIMA GERAN PENYELIDIKAN

2024 UNIVERSITY

18. ANUGERAH PENERBITAN

2024 UNIVERSITY

19. FINANCOPOLY: DEBT VS EQUITY FOR FINANCIAL WELL-BEING

4TH INNOVATION BANK CHALLENGE 2024 (IBC 2024)

2024 UNIVERSITY SILVER

20. MATHQUEST: EMPOWERING COMMUNITY WITH NUMERACY SKILLS FOR FINANCIAL CONFIDENCE

SCEINCE AND TECHNOLOGY RESEARCH EXPO (SCITEX)

2024 UNIVERSITY GOLD

21. FINQUEST: EMPOWERING COMMUNITIES WITH FINANCIAL AND EMOTIONAL RESILIENCE THROUGH INTERACTIVE SIMULATIONS.

SCEINCE AND TECHNOLOGY RESEARCH EXPO (SCITEX)

2024 UNIVERSITY GOLD

22. CASHUNO: A FINANCIAL LITERACY GAME FOR DEVELOPING SUSTAINABLE HABITS FROM A YOUNG AGE

Pertandingan Inovasi FKP 2024

2024 UNIVERSITY GOLD

23. BEST PAPER AWARD AT 8TH IIMEFC

2023 INTERNATIONAL

24. STAF CONTOH BULANAN FST SEPTEMBER 2023

2023 UNIVERSITY

25. STOCK SAVVY SQUAD

INNOVATION BANK CHALLENGE 2023 (IBC2023)

2023 UNIVERSITY BRONZE

26. STOCK SAVVY SQUAD: GAMIFIED SIMULATION FOR PORTFOLIO MANAGEMENT

International University Carnival On E-Learning (IUCEL 2023)

2023 ANTARABANGSA BRONZE

27. COMPARATIVE MODELS BETWEEN EQUITY-BASED AND DEBT-BASED FINANCING TO ACHIEVE FINANCIAL SUSTAINABILITY

Research & Innovation Poster Competition (RIPC Series 2/2023)

2023 ANTARABANGSA GOLD

28. CERTIFIED CONTENT CREATOR

2022 NATIONAL

AWARDS/RECOGNITION

29. ANUGERAH PERKHIDMATAN CEMERLANG

2022

UNIVERSITY

30. FINALIS ANUGERAH KHAS YB MENTERI PENGAJIAN: REKA BENTUK KURIKULUM DAN PENYAMPAIAN INOVATIF (AKRI)

2022

NATIONAL

31. ANUGERAH PENSYARAH PILIHAN (PEREMPUAN) MAFAST 2022

2022

OTHERS

32. ANUGERAH KUALITI PENYELIDIKAN & INOVASI

2022

UNIVERSITY

33. ANUGERAH KUALITI MAKALAH JURNAL

2022

UNIVERSITY

34. VISITING SCHOLAR

MAYBANK ISLAMIC BHD

2022

INTERNATIONAL

35. ILLUSTRATIVE CALCULUS FOR BEGINNERS

INNOVATION BANK CHALLENGE (IBC 2022)

2022

UNIVERSITY

SILVER

36. ILLUSTRATIVE CALCULUS FOR BEGINNERS

PERTANDINGAN INOVASI INTER-ASASI MATRIKULASI UNIVERSITI AWAM (PIITRAM 2021)

2021

KEBANGSAAN

GOLD

37. SC-OCIS SCHOLAR IN RESIDENCE

2017

INTERNATIONAL

38. VISITING SCHOLAR

OXFORD CENTRE FOR ISLAMIC STUDIES

2017

INTERNATIONAL