

**LAPORAN AKHIR
PENELITIAN SKEMA PENELITIAN TERAPAN**



**PREDICTING THE LEVEL OF RESILIENCE OF ISLAMIC BANKING
IN INDONESIA: AN APPLICATION OF GENETIC ALGORITHM AND
COBB-DOUGLAS APPROACHES**

Dimas Bagus Wiranatakusuma, Dr., S.E., M.Ec., CRP (0516108502)
Zaini Muchlis, Lc., MIRKH. (0519048501)
Ridwan Naufalhadi Budiutama (20200430079)
Dr. Jumadil Saputra

UNIVERSITAS MUHAMMADIYAH YOGYAKARTA

Dibiayai Oleh Lembaga Riset dan Inovasi (LRI)
Universitas Muhammadiyah Yogyakarta
Tahun Anggaran 2022/2023



UNIVERSITAS MUHAMMADIYAH YOGYAKARTA

Kampus terpadu: Jl. Brawijaya, Geblagan, Tamantirto, Bantul, Daerah
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PROTEKSI ISI LAPORAN AKHIR PENELITIAN

Dilarang menyalin, menyimpan, memperbanyak sebagian atau seluruh isi laporan ini dalam bentuk apapun kecuali oleh peneliti dan pengelola administrasi penelitian.

LAPORAN AKHIR PENELITIAN

Informasi Data Usulan Penelitian

1. IDENTITAS PENELITIAN

A. JUDUL PENELITIAN

Predicting the Level of Resilience of Islamic Banking in Indonesia: An Application of Genetic Algorithm and Cobb-Douglas Approaches

B. SKEMA, BIDANG, TEMA, DAN TOPIK PENELITIAN

Skema Penelitian	Bidang Fokus Penelitian	Tema Penelitian	Topik Penelitian
Penelitian Terapan	Sosial Humaniora - Seni Budaya - Pendidikan	Ekonomi dan sumber daya manusia	Kewirausahaan, koperasi, dan UMKM.

C. KOLABORASI DAN RUMPUN ILMU PENELITIAN

Jenis Kolaborasi Penelitian	Rumpun Ilmu 1	Rumpun Ilmu 2	Rumpun Ilmu 3
Kolaboratif Luar Negri	ILMU EKONOMI	ILMU EKONOMI	Ekonomi Syariah

D. WAKTU PELAKSANAAN

Tahun Usulan	Tahun Pelaksanaan	Lama Penelitian
2022	2023	1

E. ANCOR RESEARCH

Anchor Research	Topik Anchor
Dimas Bagus Wiranatakusuma, Dr., S.E., M.Ec., CRP	Formulation of a mechanism to monitor the development of Islamic financial institutions: Operasionalisasi Ketahanan Lembaga Keuangan Syariah

2. IDENTITAS PENELITIAN

Nama	Peran	Tugas
Dimas Bagus Wiranatakusuma, Dr., S.E., M.Ec., CRP	Ketua Pengusul	
Zaini Muchlis, Lc., MIRKH.	Dosen Pembimbing	Membantu dalam formulasi ide dan diskusi
Ridwan Naufalhadi Budiutama	Mahasiswa Bimbingan	Membantu dalam koleksi data dan admimistratif

3. MITRA KERJASAMA PENELITIAN (JIKA ADA)

Pelaksanaan penelitian dapat melibatkan mitra kerjasama, yaitu mitra kerjasama dalam melaksanakan penelitian, mitra sebagai calon pengguna hasil penelitian, atau mitra investor

Mitra	Nama Mitra	Kepakaran
Universiti Malaysia Terengganu	Dr. Jumadil Saputra	Quantitative Economics

4. KOLABORASI PENELITIAN (JIKA ADA)

Mitra	NIDN/NIK	Instansi
Dr. Jumadil Saputra	C7979016	Universiti Malaysia Terengganu

5. LUARAN DAN TARGET CAPAIAN

Luaran Wajib

Tahun	Jenis Luaran
1	Publikasi Jurnal Internasional terindeks SCOPUS,
1	Buku Referensi

Luaran Tambahan

Tahun	Jenis Luaran
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6. KLUSTER

Kluster	Sub Kluster	Group Riset	Mata kuliah
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7. ANGGARAN

Rencana anggaran biaya penelitian mengacu pada PMK yang berlaku dengan besaran minimum dan maksimum sebagaimana diatur pada buku Panduan Penelitian dan Pengabdian kepada Masyarakat.

Total Keseluruhan RAB Rp. 30,000,000

Tahun 1 Total Rp. 30,000,000

Jenis Pembelanjaan	Komponen	Item	Satuan	Vol.	Harga Satuan	Total
BAHAN	ATK (Kertas/Tinta/Alat Tulis dll)	Kertas	Paket	4	Rp. 50,000	Rp. 200,000
PELAPORAN, LUARAN WAJIB, DAN LUARAN TAMBAHAN	Biaya Luaran KI (Paten, Hak Cipta , dll)	Tahapan	Paket	15	Rp. 1,000,000	Rp. 15,000,000
PENGUMPULAN DATA	Transportasi/BBM	Liter	OK(Kali)	150	Rp. 10,000	Rp. 1,500,000
ANALISIS DATA	Biaya Konsumsi Rapat	Makan Minum	OH	10	Rp. 120,000	Rp. 1,200,000

Jenis Pembelian	Komponen	Item	Satuan	Vol.	Harga Satuan	Total
ANALISIS DATA	Honorarium Analisis Data	Bulan	OK(Kali)	7	Rp. 1,100,000	Rp. 7,700,000
PELAPORAN, LUARAN WAJIB, DAN LUARAN TAMBAHAN	Honorarium Penyusunan Buku Termasuk Book Chapter	Bab Buku	OK(Kali)	8	Rp. 550,000	Rp. 4,400,000

8. LEMBAR PENGESAHAN

HALAMAN PENGESAHAN LAPORAN AKHIR PENELITIAN SKEMA:

Judul : Predicting the Level of Resilience of Islamic Banking in Indonesia: An Application of Genetic Algorithm and Cobb-Douglas Approaches

Peneliti/Pelaksana : Dimas Bagus Wiranatakusuma, Dr., S.E., M.Ec., CRP

NIDN : 0516108502

Jabatan Fungsional : Lektor

Program Studi/Fakultas : Ekonomi

Nomor HP : +6281316328255

Alamat surel (e-mail) : dimas_kusuma@umy.ac.id

Anggota

Nama : Zaini Muchlis, Lc., MIRKH.

NIDN : 0519048501

Jabatan Fungsional : Lektor

Program Studi/Fakultas : Ekonomi

Nama : Ridwan Naufalhadi Budiutama

NIM : 20200430079

Prodi : S1 Ekonomi

Mitra : Universiti Malaysia Terengganu

Nama Mitra : Dr. Jumadil Saputra

Kepakaran : Quantitative Economics

Nama : Dr. Jumadil Saputra

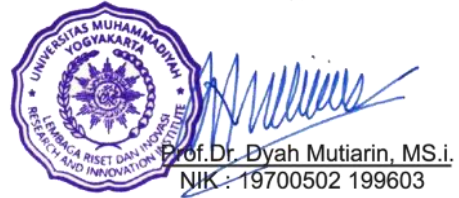
NIK : C7979016

Institusi : Universiti Malaysia Terengganu

Biaya : Rp. 30,000,000

Yogyakarta, 25 Agustus 2023

Mengetahui,
Kepala LRI,



Prof. Dr. Dyah Mutiarin, MS.i.
NIK : 19700502 199603

9. RINGKASAN

The global financial crisis has occurred periodically during the last two decades. The challenges compel economists to better grasp the nature of the crisis and how to fortify the financial system in the event of a crisis. The goal of this study is to forecast the level of resilience of Islamic banking in Indonesia using the Genetic Algorithm and the Cobb-Douglas Models. A time-series technique is used in this investigation. The information was gathered from internal banks in Indonesia between 2010 and 2022. To forecast the backward dataset till the end of 2023, several macroeconomic indicators are considered. The statistics examined in this study are from the Indonesian economy, namely the Gross Regional Domestic Product (GRDP), particularly those based on expenditure. Data gathered from the Indonesian Central Bureau of Statistics (CBS) between 2010 and 2022. The Cobb-Douglas production function was utilized in this work, and it was estimated using a genetic algorithm. EViews 9.0 econometric software and MATLAB R2013a were used to analyze the data. The findings suggest that numerous macroeconomic indicators can be forecasted and thus used to provide policy references to policymakers in responding to the current situation, notably in protecting Indonesia's Islamic banking industry.

10. KEYWORDS

Islamic banking, resilience, Indonesia, Algorithm Approach and Cobb-Douglas Model

11. STATUS LUARAN WAJIB

Luaran Wajib

No	Tahun	Jenis Luaran	Status
1	1	Publikasi Jurnal Internasional terindeks SCOPUS	Sudah Submit – Proses Review.
2	1	Buku Referensi	Sudah Submit ke LRI – Proses Revisi Naskah.

12. DOKUMEN LUARAN WAJIB

1. Publikasi Jurnal Internasional terindeks SCOPUS



Quick Submission <noreply@quicksubmissions.com>

To: Dimas Bagus Wiranata Kusuma



Fri 8/25/2023 10:39 PM

Journal: Asian Economic and Financial Review

Dear Dimas Bagus Wiranatakusuma

Thank you for submitting your article for publication. We are currently reviewing your article. Once the examination of your article has been concluded, we will inform you of the editorial decision. The review process will be completed within 15 to 20 working days. Thank you for considering our journal as a potential platform for publishing your work. Kindly contact me if further information is required.

Kind regards,

Editorial team

=====

Manuscript Title: PREDICTING THE LEVEL OF RESILIENCE OF ISLAMIC BANKING IN INDONESIA: AN APPLICATION OF GENETIC ALGORITHM AND COBB-DOUGLAS APPROACHES

Asian Economic and Financial Review

COUNTRY

Pakistan



Universities and research institutions in Pakistan



Media Ranking in Pakistan

SUBJECT AREA AND CATEGORY

Business, Management and Accounting

– Business, Management and Accounting (miscellaneous)

Economics, Econometrics and Finance

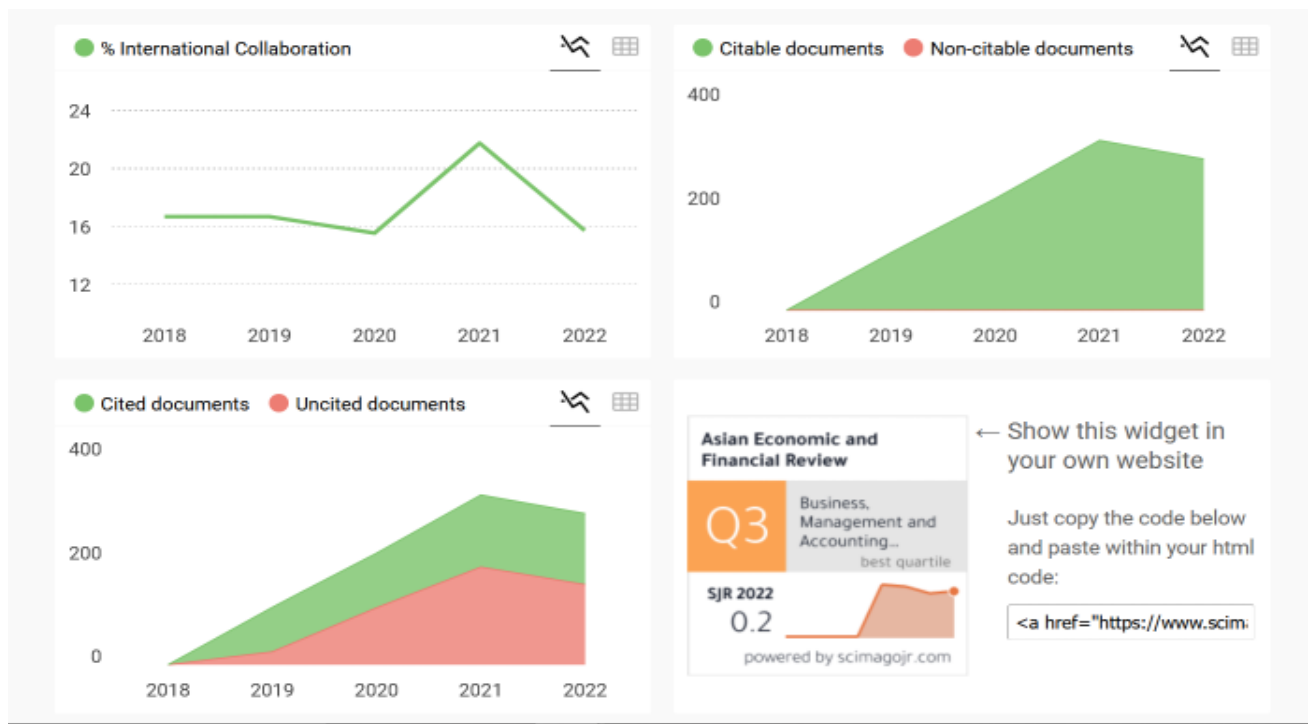
– Economics, Econometrics and Finance (miscellaneous)

Social Sciences

– Development

PUBLISHER

Asian Economic and Social Society



2. Buku Referensi

1. JUDUL BUKU

Judul Buku	BUILDING LEADING INDICATORS FOR RESILIENCE OF ISLAMIC BANKING IN INDONESIA AND MALAYSIA
Jenis Buku	Buku Monograf
Judul Penelitian Internal	Predicting the Level of Resilience of Islamic Banking in Indonesia: An Application of Genetic Algorithm and Cobb-Douglas Approaches
Judul Penelitian Eksternal	The 7th International Islamic Monetary Economics and Finance Call for Papers & Webinars (IIMEFC 2021) & The 13th International Conference on Islamic Economics and Finance (ICIEF 2021) - (Disajikan dalam Seminar tetapi tidak dipublikasikan)
Judul Pengabdian Internal	ANALYSING FACTORS AFFECTING MOTIVATION IN LEARNING ENGLISH: CASE STUDY STUDENTS AT ISLAMIC BOARDING SCHOOL AL GHIFARI YOGYAKARTA
Judul Pengabdian Eksternal	Keuangan Sosial untuk Kesejahteraan Rakyat di TVRI Yogya
Periode Usulan	Hibah Buku 2022/2023
Matakuliah	Aplikasi Makroekonomi dalam Bisnis


2. ANGGOTA PENULIS

Tim Penulis Buku UMY

Nama	NIDN	NIK	Program Studi	Kontribusi	Penulis Ke
Dimas Bagus Wiranatakusuma, Dr., S.E., M.Ec., CRP	0516108502	19851016201304 143 097	Ekonomi		1

3. DOKUMENT

DOKUMENT NASKAH

#	Jenis Dokumen	Deskripsi	Keterangan	Dokumen
1	Naskah Buku	Draft Buku	Naskah Awal	
2	Naskah Buku	Naskah Perbaikan ke 1 (23082023)	Naskah Perbaikan Ke 1	

DOKUMENT PENDUKUNG

#	Jenis Dokumen	Deskripsi	Dokumen
1	Surat Pernyataan Penugasan	Surat Penugasan	
2	Bebas Duplikasi dan Plagiasi	Surat Pernyataan	
3	Surat Keaslian Karya	Surat Pernyataan Keaslian Naskah	

UPLOAD PERBAIKAN HIBAH BUKU

UPLOAD PERBAIKAN HIBAH BUKU MONOGRAF

Judul Buku	: BUILDING LEADING INDICATORS FOR RESILIENCE OF ISLAMIC BANKING IN INDONESIA AND MALAYSIA
Jenis Buku	: Buku Monograf
Judul Penelitian Internal	: Predicting the Level of Resilience of Islamic Banking in Indonesia: An Application of Demisto Algorithm and Cobb-Croutier Approaches
Judul Penelitian Eksternal	: The 7th International Islamic Monetary Economics and Finance Call for Papers & Workshops (IIMFCF 2021) & The 13th International Conference on Islamic Economics and Finance (ICIEF 2021) - (Disajikan dalam Seminar tetapi tidak dipublikasikan)
Judul Pengabdian Internal	: ANALYSIS FACTORS AFFECTING MOTIVATION IN LEARNING ENGLISH: CASE STUDY STUDENTS AT ISLAMIC BOARDING SCHOOL AL DHARMI YOGYAKARTA
Judul Pengabdian Eksternal	: Keunggulan Sosial untuk Keberhasilan Rakyat di TVR Yogya
Periode Uraian	: Hibah Buku 2022/2023
Matakuliah	: Aplikasi Microeconomy dalam Bisnis
Nama Anggota Perulu Dan Prodiya	: Dinas Bagus Winastikaunika, Dr., S.E., M.Ed., CRP (Ekonomi) (Perulu Ke 1);
Nama Anggota Perulu Luan/Non UMY	: Adhwar, SD Alumni IPEP PES UMY (Perulu Ke 2);

UPLOAD PERBAIKAN

Periode Upload Perbaikan

- Mulai 01 December 2022, 8:00 am
- Selesai 30 September 2023, 23:59 pm

Daftar Dokumen Upload Dan Hasil Review			
No	Dokumen	Keterangan	Dokumen Hasil Review Pertama
1		Draft Buku	

Dokumen Naskah

[Tambah Dokumen](#)

No	Deskripsi	Dokumen Naskah	Keterangan	Opsi
1	Draft Buku		Naskah Awal	
2	Naskah Perbaikan No 1 (23082023)		Naskah Perbaikan Ke 1	

HASIL PENILAIAN

ASPEK PENILAIAN	BOBOT	SKOR	NILAI
A. Format dan Sistematika: Penilaian didasarkan atas kelengkapan dan kesesuaian dengan panduan hibah buku Monograf. Aspek ini meliputi : Bagian Awal: prakata, daftar isi, daftar simbol (jika ada), daftar gambar (jika ada), daftar singkatan (jika ada), daftar tabel (jika ada), daftar gambar (jika ada), daftar lampiran (jika ada). Bagian Isi: Pendahuluan (Latar Belakang, Rumusan Masalah/Tujuan), Tinjauan Pustaka, Hasil dan Pembahasan, Penutup. Bagian Akhir: daftar pustaka, indeks, glosarium, dan lampiran (jika ada).	20	5	100
B. Materi: Penilaian didasarkan atas kelengkapan, kejelasan, keakuratan, aktualitas, konsistensi, relevansi, dan pertanggungjawaban materi. Termasuk dalam aspek ini meliputi konsep, definisi, teorema, pembuktian, pendalaman serta referensi / daftar pustaka pada akhir bagian buku. Keunggulan isi dan potensi pasar.	30	6	180
C. Penyajian dan Teknik Perujukan: Penilaian didasarkan atas aspek kemenarikan, keruntutan, ketepatan, kelengkapan, konsistensi dan kesesuaian dengan kode etik akademik.	20	6	120
D. Bahasa: Penilaian didasarkan atas penggunaan bahasa ilmiah (buku), lugas, jelas, komunikatif, efektif	15	6	90
E. Relevansi Buku Dengan Matakuliah: Penilaian didasarkan atas relevansi penulisan buku monograf dengan kompetensi inti matakuliah (kognisi, afeksi, psikomotorik) pembelajaran bagi mahasiswa	15	6	90
Total	100	29	580

KOMENTAR REVIEWER

perbaikan untuk aspek sistematika

DOKUMEN HASIL REVIEW

#	Dokumen Naskah	Deskripsi Dokumen Naskah	Dokumen Hasil Review
1		Draft Buku	

13. LINK LUARAN WAJIB

Belum ada – semua proses review dan revisi

14. STATUS LUARAN TAMBAHAN

Tidak ada luaran tambahan

15. DOKUMEN LUARAN TAMBAHAN

Tidak ada luaran tambahan

16. LINK LUARAN TAMBAHAN

Tidak ada luaran tambahan

17. PERAN MITRA (JIKA ADA)

Membantu dalam analisis data

18. DAFTAR PUSTAKA

1. Al-Nasser Mohammed, S. A. S., & Muhammed, D. J. (2017). Financial crisis, legal origin, economic status and multi-bank performance indicators Evidence from Islamic banks in developing countries. *Journal of Applied Accounting Research*, 18(2), 208–222. <https://doi.org/10.1108/JAAR-07-2014-0065>
2. A. Ahmad and M. Khan (2015) “Estimating the Cobb-Douglas Production Function,” *International Journal of Research in Business Studies and Management*, vol. 2, no. 5, pp. 32-33
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4. C. W. Coma and P. H. Douglas. (1928) “A theory of production,” In *Proceedings of the Fortieth Annual Meeting of the American Economic Association*, March 1928, pp. 165-170.
5. Claessens, S., & Van Horen, N. (2015). The Impact of the Global Financial Crisis on Banking Globalization. *IMF Economic Review*, 63(4), 868–918. <https://doi.org/10.1057/imfer.2015.38>
6. Chattha, J. A., & Archer, S. (2015). Solvency stress testing of Islamic commercial banks: Assessing the stability and resilience. *Journal of Islamic Accounting and Business Research*, 7(2), 112–147. <https://doi.org/10.1108/JIABR-09-2014-0031>
7. Dymski, G. a. (2010). *Understanding the Subprime Crisis: institutional evolution and theoretical views*.
8. Frydl, E. J. (1999). The Length and Cost of Banking Crises. In *IMF Working Papers* (Vol. 99, Issue 30, pp. 1–32). <https://doi.org/10.5089/9781451844894.001>
9. Hashem, S. Q., & Abdeljawad, I. (2018). *Islamic Banks’ Resilience to Systemic Risks: Myth or Reality-Evidence from Bangladesh*. 37–68. <https://doi.org/10.1108/s1569-376720180000019003>
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12. Smolo, E., & Mirakhor, A. (2010). The global financial crisis and its implications for the Islamic financial industry. *International Journal of Islamic and Middle Eastern Finance*

- and Management*, 3(4), 372–385. <https://doi.org/10.1108/17538391011093306>
13. Wiranatakusuma, D. B. (2018). Constructing Islamic Banking Resilience Index in Indonesia. *Journal of Islamic Monetary Economics and Finance*, 3, 59–82. <https://doi.org/10.21098/jimf.v3i0.760>

19. LAMPIRAN-LAMPIRAN



**LETTER OF AGREEMENT
FOR RESEARCH
COLLABORATION**

This letter of agreement for research collaboration

(hereinafter referred to as “LoA”) is made this

Wednesday, 30 November 2022.

Herewith, I sign as Team Leader of Research Team of the Faculty of Business, Economics, and Social Development (FBESD), a public institution of higher learning whose principal address is at Universiti Malaysia Terengganu, 21030 Kuala Terengganu Terengganu, MALAYSIA.

and for the purpose of this LoA is represented by:

1. Name : Dr. Jumadil Saputra
Department: Economics
Faculty : Business, Economics, and Social Development
Position : Senior Lecturer

I agree to carry out the collaborative research with Dr. Dimas Bagus Wiranatakusuma, Lecturer in Faculty of Economics and Business, Universitas Muhammadiyah Yogyakarta (UMY)

As Principal Team of Faculty of Economics and Business, Universitas Muhammadiyah Yogyakarta (UMY) of Indonesia, whose principal address is at Kampus Terpadu UMY, Jl. Lingkar Selatan, Kasihan Bantul, Yogyakarta, DIY 55183, Republic of Indonesia (hereinafter referred to as “UMY”).

Both of teams here will work on the collaborative research entitled:

Predicting the Level of Resilience of Islamic Banking in Indonesia: An Application of Genetic Algorithm and Cobb-Douglas Approaches

This LoA sets out below the definite framework and intentions of both Teams for collaboration.

In achieving the objectives of this LoA, both teams will gain benefits to be derived for the research collaboration by way of sharing and further finalize the research.

This LoA is valid and shall remain in effect for 3 (three) years from the date of this LoA.

SIGNED:



Assist. Prof. Dr. Jumadil Saputra



(Assist. Prof. Dr. Dimas Bagus Wiranatakusuma