The Structure of Islamic Economics and Finance Research
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The Structure of Islamic Economics and Finance Research

A comprehensive structuring of the literature in Islamic economics and finance in a bias-free statistical learning approach

1st INTERNATIONAL BANKING AND FINANCE RESEARCH CONFERENCE

ENC G Agadir, IBN ZOH R UNIVERSITY
Agadir, Morocco. October, 9-10, 2019

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1- STUDY RESEARCHERS

**Ezzedine GHLAMALLAH**, is a French PhD student in management sciences.
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**Christos ALEXAKIS**, is a Greek academic in management sciences.
Associate Professor, Finance & Accounting Academic Area, Rennes School of Business.

**Michael DOWLING**, is an Irish academic in management sciences.
Associate Professor, Finance & Accounting Academic Area, Rennes School of Business. Director of Doctoral Programmes, Rennes School of Business.

**Anke PIEPENBRINK**, is a German academic in management sciences.
Associate Professor, Strategy & Innovation Academic Area, Rennes School of Business. Head of Strategy & Innovation Academic Area, Rennes School of Business.
2- INTRODUCTION

Islamic Finance Industry Outlook*

**45 COUNTRIES WITH SPECIFIC REGULATIONS**

**1 389 ISLAMIC FINANCIAL INSTITUTIONS**

**2 438 $ bn ISLAMIC FINANCE ASSETS**

**688 EDUCATION BODIES**

*Thomson Reuters state of the global Islamic economy report 2018/19*
2- INTRODUCTION

Aims of the Paper

- To provide a comprehensive structure of the literature through a consideration of all relevant research on Islamic economics and finance for the period 1979 to 2018;
- To deliver a clear structure for ongoing research agendas in Islamic economics and finance as well as a framework for understanding research development in this area;
- To organize a large and growing literature;
- To extract the key topics into which the Islamic economics and finance literature can be categorized;
- To enable researchers in Islamic economics and finance to understand the entire composition of the literature;
- To identify the core research within each topic.

Methodology

- A probabilistic machine learning approach to categorize 1495 articles with the textual analysis machine learning technique called Latent Dirichlet Allocation (LDA) topic modelling that allows statistical learning of the connection between research articles as well as their shared topics;
- The most widely accepted technique for topic modeling;
- A study based on identified research related to Islamic economics and finance from the Elsevier Scopus database.
2- INTRODUCTION

Methodology: Corpus & Pre-processing

- **Searching within only economics, econometrics, and finance journals** for a range of possible Islamic economics and finance terms: Islamic, gharar, hadith, halal, haram, ijara, maysir, mudarabah, musharaka, shariah, riba, sukuk, takaful, and zakat;
- **Identifying research related to Islamic economics and finance** from the Elsevier Scopus database;
- **Retrieving 1,495 articles in our search which covers the period 1979-2018**, and the abstracts are obtained for each article. These abstracts form the documents for the LDA analysis;
- **Using the R packages** tm and quanteda for pre-processing;
- **Atomizing first each abstract** into a collection of individual words, the words are then converted to lowercase and digits and punctuation removed;
- **Removing ‘stopwords’** - words such as ‘and’, ‘or’, ‘I’, that provide no topic relevant information;
- **Applying Porter’s stemming algorithm** to reduce words to their stem;
- **Using Term Frequency-Inverse Document Frequency (TF-IDF) term removal.**
2- INTRODUCTION

Methodology: Topic Identification

- Getting a large Document-Term-Matrix (DTM) which consists of columns of all abstracts and rows of all words;
- Using the R package topicmodels on the DTM to run the topic extraction;
- Setting the number of topics to be extracted at either 21, 24, 27, 30, 33, or 36;
- Setting 10 different random starting points among the documents for each topic extraction;
- Running 60 different topic models (six different number of topics extracted multiplied by 10 random seeds);
- Inspecting the Krippendorff’s α which is provided by our testing to find the set of topic distributions that are most distinct, for our corpus, this results in 36 topics being initially identified as the best distribution of topics across the corpus;
- Modeling the words that best describe each topic. As is standard, we normally use the top ten words for a topic and seek to use these words to label the topic;
- Inspecting the top-matched abstracts for a topic to further understand the nature of that topic identified as being outside the remit of this paper;
- Remaining 32 topics;
- Proceeding to topic reduction results in the 11 combined labels that make up the analysis of the remainder of the paper;
- Discussing the 11 combined labels in three broad sections covering the overall categories of Islamic economics, Islamic finance, and governance and morality.

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3- topic modeling approach

Structure of Islamic Economics & Finance Research

- Islamic Economics (7)
- Islamic Finance (15)
- Islamic Governance & Morality (10)

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3- TOPIC MODELING APPROACH

Key Combined Labels of Islamic Economics & Finance Research

- Economic philosophy & history (2)
- Economic & monetary policy (3)
- Economic conditions (2)
- Islamic banks (5)
- Risk management (3)
- Financial management (2)
- Islamic Finance (15)
- Islamic Governance & Morality (10)
- Islamic Economics (7)

Philanthropic & inclusive finance (4)
Contracting & legal enforcement (2)
Corporate governance (4)
Consumer behavior (2)
Financial assets (3)

The Structure of Islamic Economics and Finance Research
4- TOPICS IN ISLAMIC ECONOMICS

Structure of Topics & Combined Labels in Islamic Economics

- Economic philosophy & history (2)
- Economic & monetary policy (3)
- Economic conditions (2)

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(The Structure of Islamic Economics and Finance Research)
### 4- TOPICS IN ISLAMIC ECONOMICS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Combined label</th>
<th>Initial topic</th>
<th>Top matched words</th>
<th>Top matched paper</th>
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</table>

Table of topics labelled as Islamic economics as determined based on extraction of topics from an overall database of 1,495 articles that match Islamic economics and finance terms in Scopus. ‘Top matched words’ are the stemmed words that best describe the topic. ‘Initial label’ is the initial label assigned to a topic by the study researchers, and ‘Combined label’ is the label assigned to a set of initial topics by the study researchers.
5- TOPICS IN ISLAMIC FINANCE

Structure of Topics & Combined Labels in Islamic Finance

- Islamic banks (5)
- Risk management (3)
- Financial management (2)
- Financial assets (3)
- Consumer behavior (2)

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Table of topics labelled as Islamic finance as determined based on extraction of topics from an overall database of 1,495 articles that match Islamic economics and finance terms in Scopus. ‘Top matched words’ are the stemmed words that best describe the topic, ‘Initial label’ is the initial label assigned to a topic by the study researchers, and ‘Combined label’ is the label assigned to a set of initial topics by the study researchers.
### 5- TOPICS IN ISLAMIC FINANCE

<table>
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<th>Initial topic</th>
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</tr>
</thead>
</table>
6- TOPICS IN ISLAMIC GOVERNANCE & MORALITY
Structure of Topics & Combined Labels in Islamic Governance & Morality

- Corporate governance (4)
- Contracting & legal enforcement (2)
- Philanthropic & inclusive finance (4)
## 6- TOPICS IN ISLAMIC GOVERNANCE & MORALITY

<table>
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<tr>
<th>Topic</th>
<th>Combined label</th>
<th>Initial topic</th>
<th>Top matched words</th>
<th>Top matched paper</th>
</tr>
</thead>
</table>

*Table of topics labelled as Islamic governance and morality as determined based on extraction of topics from an overall database of 1,495 articles that match Islamic economics and finance terms in Scopus. ‘Top matched words’ are the stemmed words that best describe the topic, ‘Initial label’ is the initial label assigned to a topic by the study researchers, and ‘Combined label’ is the label assigned to a set of initial topics by the study researchers.*

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7- ORIGINALITY, FINDINGS & LIMITS

Originality 🛠

- A **novel approach** for the purpose of structuring research articles (Latent Dirichlet Allocation topic modeling);
- Topic modeling is widely applied in the computer sciences to identify topics in large corpus of documents, but **has only been applied in a limited manner in business disciplines**;
- A **Structuration of a much wider literature** than is feasible in a manual review of the literature;
- The **first study to apply topic modeling** to systematically identify the key topics of research within the discipline of Islamic economics and finance.

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Findings

- The **structure of Islamic economics and finance research is largely grounded in a discussion of developing country economic issues** driven by most Muslim majority countries being classified as developing economies;
- Literature is concentrated on Muslim affairs, **the debt crisis, interest cancellation, climatical changes are not mentioned** even if these issues are worldwide concerns;
- The development of Islamic economics which lags significantly behind the development of Islamic finance. In much the same way as capitalist economics underpins conventional finance, **there is a need for stronger focus on the development of Islamic economics**;
- Topics are focused on **solutions to practical issues**.

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Findings

- Significant **lack of data** to support empirical studies;
- It is necessary **to have more empirical studies on the performance of Islamic equity investments**;
- Main group of topics is **Islamic Finance** and main topic in overall study is **Islamic banking**;
- Main topic in Islamic economics is **economic & monetary policy**;
- Main topic in Islamic finance is **Islamic banks**;
- Main topics in Islamic governance & morality are **corporate governance and philanthropic and inclusive finance**;
- Majority of publications are in journals that have either a **very low journal rank or no journal rank** when compared to popular journal ranking systems such as the UK Academic Journal Guide, this is a common issue with newly developed research areas.

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Limits

- Only 1495 English articles in Scopus have been extracted and investigated, it would be interesting to use the same technic to incorporate other databases and languages like Arabic and French;

- This research provides a "frozen" view of the structure of Islamic economics and finance research, in order to analyze the progression of Islamic economics and finance research, it is necessary to perform it very often to monitor its evolution.
Thanks!

Any questions?

You can write us @:

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