Big Data and Islamic Finance

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INTRODUCTION

This book chapter reviews the studies on big data in relation to Islamic finance available in three academic databases, namely, Web of Science (WoS), Scopus, and Google Scholar. Islamic finance is one of the finance research topics gaining more attention in recent years because of its unique features, differentiating itself from conventional finance. Obtaining an insight on this topic will shed light on the big data application in a sharia setting, in which religious values are embedded.

BACKGROUND

Big data can be defined as the tremendous amount of data that can be analyzed using the advanced computer to produce particular patterns, trends, and relationships (Sagiroglu & Sinanc, 2013). Although it was born from the information and technology domain, the application of big data in the business environment has been the concern of many corporations, and it is deemed one of the sources of competitive advantage in the current era (Chen et al., 2018). Also, the studies on big data have been extensively conducted by scholars across the globe (Gandomi & Haider, 2015), both in business settings and others.

Big data technology has been well studied in various fields, such as marketing (Zhao et al., 2019), human resources (El-Kassar & Singh, 2019), operations (Choi et al., 2018; Lu & Xu, 2019), transportation systems (Ghofrani et al., 2018), Internet of Things (Plageras et al., 2018), healthcare (Batko & Ślęzak, 2022; Dash et al., 2019) and Covid-19 case (Awotunde et al., 2021; Wang et al., 2020) The universal purpose of big data has clearly inspired many people in any field to embrace this technology to improve the effectiveness and efficiency of any organization, either profit oriented or non-profit oriented ones. Furthermore, many previous studies have also been recently conducted using a systematic literature review approach on big data. Those studies relate big data to many other aspects, such as tourism (Li et al., 2018; Mariani et al., 2018), supply chain management (Mishra et al., 2018; Nguyen et al., 2018; Rejeb et al., 2022) manufacturing (Cui et al., 2020; Ren et al., 2019), disaster management (Akter & Wamba, 2019; Yu et al., 2018), healthcare (Mehta & Pandit, 2018; Pashazadeh & Navimipour, 2018), text mining in financial sector (Pejić Bach et al., 2019), firm performance (Maroufkhani et al., 2019), transportation research (Kaffash et al., 2021; Neilson et al., 2019), and organization dynamic capabilities (Rialti et al., 2019).

Very few big data studies have been sufficiently published in various journals focusing on Islamic finance. In fact, the general nature of big data can be used either by Islamic or non-Islamic business entities because big data can be considered a religious-neutral application. Therefore, this study aims to

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review the studies that relate big data and Islamic finance published in the journals indexed in Web of Science, Scopus, and Google Scholar. The two indexes, as mentioned earlier, were selected because they are the most well-known and trusted indexing databases in which many scholars are pursuing to have their papers indexed by them. While the third one, namely, Google Scholar, was selected to enhance the results of the review conducted on Web of Science and Scopus indexes.

One distinguishing feature of this present research is that it focuses on a current and specific topic, namely, the big data and Islamic finance, which is rare among Islamic finance studies. The studies on this topic will provide insight into how big data is related to Islamic finance, such as the implementation in Islamic financial institutions across the world, either Muslim or non-Muslim countries. This paper will produce a framework of big data and Islamic finance that will enrich the research of both Islamic finance and big data.

The structure of this paper is as follows. This section outlines the introduction and purposes of this present study. The following section describes the method undertaken, consisting of the document search and document selection to be included in our review. The following section is results and discussion, followed by future research directions and a conclusion in the final sections. Additional reading and key terms, as well as definitions, are provided to enhance the understanding of the readers about big data and Islamic finance.

METHOD

The studies on big data and Islamic finance were retrieved from the three databases, namely, Web of Science (WoS), Scopus, and Google Scholar. To obtain the literature from Web of Science and Scopus, we directly downloaded the documents from those two websites. However, to obtain data from Google Scholar, we utilized Publish or Perish (PoP) software (Harzing, 2010) commonly used in bibliometric or scientometric studies (for instance, Ardianto & Anridho, 2018; Iqbal et al., 2019; Lee et al., 2014). All obtained papers were downloaded and reviewed in order to gain an understanding of the big data studies focusing on Islamic finance. In those Web of Science and Scopus databases, we conducted the article search on August 17, 2021, using the keywords ‘big data’ and ‘Islamic finance’ combined. In a slightly different approach, for Google Scholar, we used the word ‘big data Islamic’ in the title field of PoP software to produce a richer result supporting the results from Web of Science and Scopus. This mechanism enables us to portray the current state of the topic to provide further direction for researchers, primarily those interested in digital finance topics, such as big data. Figure 1 illustrates the process we conducted in this study.

Our initial search in Web of Science and Scopus results in 34 documents merged from the two databases. These documents consist of several items, i.e., journal articles, conference proceedings, reviews, and book chapters. Since the search results produced many irrelevant documents, we then selected the only documents which discuss the big data in Islamic finance settings. The relevant documents consist of the word ‘big data’ in either the title or abstract fields. Non-relevant documents, such as those only containing the word ‘data’ and ‘big’ in the separate locations, are excluded since they have no relationship or relevance with this research topic. As there are documents indexed by both, we only consider them as a single document and are processed in the next stage, namely document selection.

As the initial search using Web of Science and Scopus produced a relatively small number of documents, we conducted an additional search on Google Scholar indexed and managed to obtain five (5) relevant documents from the obtained 16 documents. These documents are expected to enrich our findings