The Potential Application of the Expert System in Facilitating Arbitration in Malaysia

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Abstract

Many arbitrators have no enough knowledge and expertise to decide on the Islamic banking disputes containing a Shariah matter. As a result, the Malaysian government enacted the Central Bank of Malaysia Act 2009 (Act 701) (hereinafter referred to as "CBMA 2009") that obligate the arbitrators and judges to refer such Shariah matter to the Shariah Advisory Council (hereinafter referred to as "SAC") of Bank Negara Malaysia (hereinafter referred to as "BNM") for its ruling. The referral process is time-consuming and not in line with technological development brought by Artificial Intelligence (hereinafter referred to as "AI"). By using doctrinal legal research methodology, this article strives to examine the potential application of the expert system (hereinafter referred to as "ES") in facilitating arbitration in Malaysia. The data are collected by using a library-based approach, and they are analytically and critically examined and interpreted by using a content analysis approach. It is found that ES provides several advantages. Ultimately, it is recommended that establishing ES in the context of Islamic banking disputes would streamline the resolution process and provide the arbitrator with efficient, fast, and cheap solutions to the Islamic banking dispute containing a Shariah matter. This would thereby reduce the routine tasks of the human experts and positively impact the justice system in Malaysia.

Keywords: Traditional Arbitration, Islamic Banking, Expert System, Artificial Intelligence, Dispute Resolution.

1. INTRODUCTION

One of the main elements for the flourishing development of the Islamic banking industry in Malaysia is the existence of anenhanced legal framework that supports its growth and operation. In this respect, BNM has always maintained that Islamic banking transactionsshould be quickly and smoothly executed and enforced [5]. The Islamic banking transactions and products should always be *Shariah-compliant*. This is the essence of Islamic banks compared with conventional banks. However, Islamic banking transactions and products might not be executed, on some occasions,because they are against *Shariah* law. This, in turn, means they are not *Shariah-compliant*.

In Malaysia, Islamic banking disputes can be resolved by either arbitration or litigation. One of the obstacles in arbitrating Islamic banking disputes containing a *Shariah* matter in Malaysia is that the arbitrators have insufficient knowledge and expertise in *Shariah* law[7][10] [11]. As a result,the Malaysian government in 2009 enacted CBMA 2009. Specifically, under CBMA 2009, SAC plays an essential role in reducing the difficulties in the Islamic finance industry [2], including the Islamic banking industry. SAChas several functions (CBMA 2009, section 52);one of them is to ascertain the Islamic law on any financial matter and issue a ruling upon a reference made to it (CBMA 2009, section 52 (1)). Besides, sections 56 and 57 obligate the judges and arbitrators to refer the *Shariah* issue arising in proceedings pertaining to Islamic banking disputes to the SAC of BNM for its ruling, and the rule of SAC is binding on both of them (arbitrators and judges).

On the other hand, since the speech made by a well-known arbitrator "Sophie Nappert" entitled "AI and its impact on International Arbitration" at the 6th Asia-Pacific Arbitration Disputes Resolution Conference 2017 held in Seoul, AI has become one of the hot topics discussed in the Asia Pacific Region. Specifically, AI refers to technologically created intelligence that is able to learn and process enormous amounts of data by using certain algorithms that compute much faster and with greater aptitude than human brains can manage [12].

There are several AI applications and techniques, including but not limited to the ES that was developed in the 1970s by Edward Feigenbaum. ES is defined as a domain-specific AI system that mimics and imitates the intelligence of human-experts [14] and aims to solve complex dilemmas and problems in a specific domain [1], such as Islamic banking.Indeed, ES has played a vital role in several industries, including the legal industry. For instance, ROSS Intelligence is an ES that built on IBM's Watson cognitive computing platform [17]. Specifically, it is an AI-attorney that relies on self-learning systems that use pattern recognition, natural language processing, data mining, and deep learning to imitate the working mechanism of the human brain [13]. This plays a vital role in enhancing the accuracy and quality of work for the attorneys and leading to time savings for them.

In the context of this article, Malaysia has made tremendous progress in using AI, as Shang & Co developed Malaysia's First Artificial Legal Assistant known as "AskAILA" [8]. AskAILA is an AI application that is trained and furnished with Malaysian Labour Law in order to support employers and human resource managers (HRM) in Malaysia [3]. As a result, it helps in providing accessible and low-cost legal advice in the area of labour law, compared with traditional law firm [3].

Regardless of the previous fact, Malaysia is still lagging behind in the context of analysing the potential application of the ES in facilitating arbitration in Malaysia. Doing so would streamline the resolution process and provide the arbitrator with efficient, fast, and cheap solutions to the Islamic banking dispute containing a *Shariah* matter. In the light of this Thompson (2015) mentioned that access to justice could be enhanced considerably by using ES. According to him, doing so could bridge the 'implementation lacuna' that impedes the implementation of AI in the justice industry [15].

2. METHODOLOGY

This article is based on the doctrinal legal research methodology. Both primary and secondary data are used. Besides, the data are collected through the library-based approach. Specifically, the primary data are collected from Acts and Laws. At the same time, the secondary data are sourced from books, legal documents, and articles from journals and online resources. Then both primary and secondary data are critically and analytically examined and interpreted by using the content analysis approach.

3. FINDINGS AND DISCUSSION

3.1 The Advantages and Disadvantages of ES

An ES has been reliably utilised in the modern age to forecast the solutions and facilitate access to justice. In Islamic banking disputes, every decision made by the arbitrator is significant for achieving justice; the assistance furnished by an ES is necessary and plays an essential role in achieving that purpose. The following presents the advantages of ES:
1- Availability: an ES is accessible anytime and available twenty-four hours, seven days a week (24/7) [9].
2- Fast: an ES has the ability to provide solutions in a short time [9]. Besides, several users or non-experts, such as arbitrators, can access an ES simultaneously and obtain solutions from it instantly. So, the total time taken by an ES to gives solutions and answers is less than a human expert.
3- Consistency [9]: an ES provides consistent solutions for similar questions because ES is programmed in an "if-then" manner; for instance, if specific conditions occur, then specific solutions should be provided.
4- Accurate: an ES provides accurate solutions because it uses all the knowledge, data, and information inserted within it. This could play a vital role in eliminating and reducing error and inconsistency and enhancing the decision quality since all tedious and single detail will be considered.
5- Efficient: an ES has the ability to store massive data and knowledge [16].
6- Sustainable: Once the data, knowledge, and information have been inserted into an ES, it will not vanish or lose even though a human expert dies.

Regarding the disadvantages of ES,

1- Operational challenges: Establishing an ES requires a huge amount of time and money, especially in terms of programming an ES. However, it is argued that the operational challenges are only one-time expenses. In this regard, once the ES is in place, the establishment cost would be reduced and limited to maintenance only.

2- Limited: an ES has limited capabilities. It is only can provide solutions and answers to issues that it programmed for. In turn, an ES cannot provide solutions and answers for the new kind of issues.

3- The risk of glitches and errors: an ES is a computer program that is vulnerable to insider risks, such as technical bugs and errors, and outsider risk, such as cyber-attacks.

3.2 The Main Components of ES

In the context of this article, ES performs several actions such as interpretation, perception, learning, communication, reasoning, and decision-making in order to reach a proper solution for the submitted problem [6].ES comprises three (3) main components, Knowledge Base (hereinafter referred to as "KB"), Inference Engine (hereinafter referred to as "IE"), and User Interface (hereinafter referred to as "UI"). The following discusses these components in detail.

Firstly, KB is a storage that stores the knowledge, data, and information acquired from several experts (Durnkin, 1994), such as the member of SAC, of the specific domain, such as Islamic banking. In short, KB resembles a database that includes massive rules and information of a specific subject or domain.

Secondly, IE is the brain of the ES. Its main function is to acquire pertinent information, data, and knowledge from the KB, interpret them and discover solutions in accordance with the user'sor non-expert's queryand problem [9].The user or non-experts could be the arbitrator who wants to decide on an Islamic banking dispute containing a *Shariah* matter.

Thirdly, UI is fundamental for the users or non-experts, such as arbitrators. It helps them to interact with the ES and find answers and solutions [4]. Mainly, UI receives the questions or queries from the users or non-experts, such as arbitrators, and then passes these questions or queries to the IE. Upon obtaining the responses and results from the IE, UI displays them to the users or non-experts,such as arbitrators. It is worth noting here that UI translates the inputs of the users or non-experts, such as arbitrators, into a specific format that can be computed and understood by a computer. In exchange, it also translates outputs of ES into a specific format that can be understood by the users or non-experts, such as arbitrators.

3.3 The Stages of Inserting Data, Information, and Knowledge into the ES

The following figure shows how the data, information, and knowledge will be inserted into the ES. Each step is explained and further presented in the figure below for a clear understanding.

Figure 1. The Mechanism for Planting Data, Information, and Knowledge in the ES

Step 1. The human experts, such as the members of SAC, transfer their expertise, knowledge, and rules to the knowledge engineers.

Step 2. The knowledge engineerstransfer the data, information, knowledge, and rulesobtained from the human experts, such as the members of SAC, into a specific format that can be computed and understood by the computer.

Step 3. The KB stored the data, information, knowledge, rulesplanted by the knowledge engineers.

3.4 The Practical Application of ES InFacilitating Arbitration In Malaysia

On 19th June 2012, SAC issued a manual, known as the Manual for Reference by the Court and Arbitrators to the *Shariah* Advisory Council of Bank Negara Malaysia (hereinafter referred to as "the Manual"). Under the Manual, SAC is obligated to render its decision within a maximum of ninety (90) days starting from the day when a complete reference is received by the Secretariat of SAC, unless there are unpredictable or unavoidable events (The Manual, part C (9)).According to the Manual, the process of referral any *Shariah* matter to SAC requires the following six (6) steps (The Manual, parts C; D).

Firstly, the arbitrator will refer a *Shariah* matter to SAC through the Secretariat of SAC.

Secondly, within seven (7) days starting after receiving a referral from the arbitrator, the Secretariat of SAC will notify the members of SAC in writing to arrange for a meeting on such date, time, and place agreed by them.

Thirdly, the Secretariat of SAC will conduct preliminary analysis and research on the *Shariah* matter referred by the arbitrator.

Fourthly, the Secretariat of SAC will present the analysis and research in the SAC meeting to obtain results.

Fifthly, SAC will give a decision on the *Shairah* matter, and the Secretariat of SAC will record that decision.

Sixthly, the Secretariat of SAC will notify the decision approved by the Chairman of SAC to the arbitrator. Besides, the process of referral any *Shariah* matter by the arbitrator to SAC is made by submitting Appendix A through an email medium. All these steps might lead to more time-consuming. This could negatively impact the nature of the Islamic banking disputes that need prompt resolution.

The following figure presents the practical application of ES in facilitating access to justice in resolving Islamic banking disputes through traditional arbitration in Malaysia. Each step is explained and further presented in the figure below for a clear understanding.
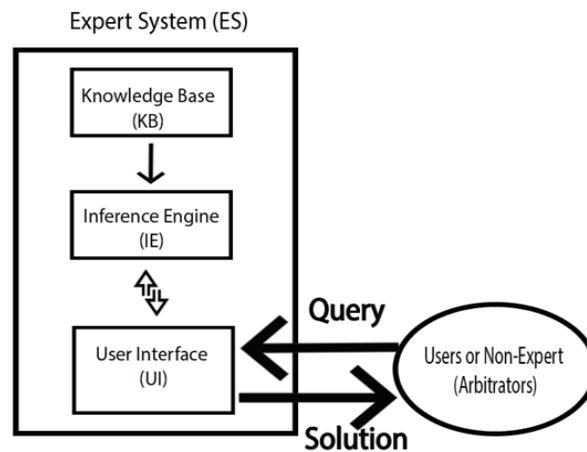

Figure 2. The Practical Application of ES in Facilitating Arbitration In Malaysia

Step 1. The user or non-expert, such as arbitrator,submits a query or question regarding a specific Islamic banking dispute containing a *Shariah* matter to the ES. In this case, he/she should fill in the form provided by the UI and answers all the needed questions.
Step 2. The UI transfers the submittedquery or question (*Shariah* issue) that needs to be decided by SAC to the IE.
Step 3. The IE acquires pertinent data, information, and knowledgerelating to the submitted query or question (*Shariah* issue) from the KB.
Step 4. The UI transfers the solutions provided by IE to the user or non-expert, such as arbitrator, in a readable and understandable format.

4.   CONCLUSION AND RECOMMENDATIONS

The most significant field of AI is the field of ES. The power of an ES derives essentially from the particular knowledge about a specific field or domain saved in the KB of the ES. Although ES has provoked several debates regarding the destiny of humanity in facing such type of intelligence, it is essential to note that ES has not reached a stage to replace the human expert because it is based on the data and knowledge inserted into it.On the other hand, an ES would assist users, non-experts, such as arbitrators, in decision-making and reduce the time and cost needed by them to obtain solutions on Islamic banking disputes containing a *Shariah* matter.

In conclusion, it is recommended that the Malaysian government should invest more in the AI industry, including ES, because of its valuable advantages. For instance, ES would streamline the resolution process and provide the arbitrator with efficient, fast, and cheap solutions to the Islamic banking disputes containing a *Shariah* matter. This would thereby reduce the routine tasks of the human experts and positively impact the justice system in Malaysia.

5.   ACKNOWLEDGEMENT

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