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A systematic mapping study: exploring islamic inheritance in computing research

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ABSTRACT

Islamic inheritance, a fundamental component of Islamic jurisprudence governing asset allocation among heirs, presents challenges due to its complexity. Accessible resources are crucial to address these challenges, with computational technologies offering promising solutions. This systematic mapping study provides a comprehensive overview of research at the intersection of computing and Islamic inheritance, comprising 20 studies identified primarily through snowballing. It analyses publication trends, identifies primary application domains, explores computational technologies utilized, assesses empirical evaluation methods, and uncovers gaps, challenges, and limitations in the existing literature, ultimately determining areas necessitating further research. The findings suggest a significant presence of researchers from Southeast Asia, predominantly with backgrounds in computing. The studies focused on the computation of wealth distribution, employing various computational technologies. Furthermore, the findings emphasise the importance of interdisciplinary collaboration and empirical evaluation to enhance technological solutions in this domain.

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1. INTRODUCTION

Islamic inheritance, also known as Mawaris or Faraid, stands as a pivotal component of Islamic jurisprudence, governing the allocation of assets and wealth among qualified heirs following the demise of an individual. Rooted in the Qur'an (the holy book of Muslims), Hadith (the sayings and teachings of the Prophet Muhammad), and the consensus reached by qualified scholars, Islamic inheritance relies on intricate rules and calculations, demanding specialized knowledge and expertise in Islamic law and principles.

Despite its integral role in Muslim societies, the rules of Islamic inheritance are complex and challenging to understand, particularly for those lacking prior exposure or expertise in the field. This sentiment is echoed in scholarly discourse [1]-[3], underlining the need for easily accessible resources to facilitate the comprehension and application of Islamic inheritance. Information technologies present a promising avenue to address this challenge. Notably, there is a growing demand for computational solutions, such as inheritance calculation systems, within Muslim communities [2].

There are few reviews on the uses of information technology in topics related to Islam. For instance, Zadeh [4] conducted a systematic review of 975 studies on the application of artificial intelligence and other information technology in Islamic sciences. The author performed a thematic analysis on the included studies and found that 62% were related to the Qur'an, 19% were related to Hadith and Rijal Science (i.e., the

Science of Narrators, which evaluates the narrators of hadith), 8% focused on the general content of Islamic sciences, 7% addressed Islamic law and jurisprudence, and 4% were related to other Islamic sciences. One of the topics studied under Islamic law and jurisprudence is "conforming to Islamic rules", such as by developing systems for inheritance calculation.

Given the importance of research related to Islamic inheritance, it is evident that this area warrants a dedicated review that thoroughly examines studies in this domain, particularly those pertaining to inheritance and computing. Furthermore, after checking the reference list of the review reported in [4], only three studies were found to specifically address automatic inheritance calculation. This limited number suggests that there may be additional pertinent studies that remain unidentified, especially considering the lack of comprehensive details in the previous review regarding databases, search queries, and other critical information necessary to understand the scope of the search. Therefore, this study seeks to locate and review these studies.

Through a systematic mapping of the literature using multiple data sources, this study aims to offer a comprehensive overview of the existing body of research at the intersection of computing and Islamic inheritance. It analyses computational technologies employed in addressing challenges related to Islamic inheritance, synthesizes the current state of knowledge, identifies research trends, and highlights gaps for future exploration.

The objectives of this study are as follows:

- To systematically identify and catalog existing research studies that explore the intersection of computing technologies and Islamic inheritance.
- To provide an overview of the research community and its activities, encompassing the publication rate, types of papers within the field, publication venues, identification of active researchers, and interdisciplinary collaboration.
- To categorize the computational approaches, methodologies, and tools utilized in addressing challenges related to Islamic inheritance.
- To analyze prevalent research trends, shedding light on the evolving landscape of computing research in Islamic inheritance.
- To identify gaps, challenges, and limitations in the existing body of literature, pinpointing areas where further research and innovation are needed.

Based on these objectives, the following research questions (RQ) were developed:

- RQ1 what are the publication trends of research articles on computing technologies and Islamic inheritance?
- RQ2 what are the primary application domains within Islamic inheritance where computing technologies have been applied?
- RQ3 what computational technologies are utilized in addressing challenges related to Islamic inheritance?
- RQ4 what is the current state of empirical evaluation methods utilized in the domain?
- RQ5 what gaps, challenges, and limitations exist in the current literature on this computing research in Islamic inheritance, and which areas require further research?

2. METHOD

This systematic mapping study followed the procedure outlined in Kitchenham's guidelines [5]. The detailed steps of this procedure are described below.

2.1. Inclusion and exclusion criteria

To be considered for inclusion in this review, studies must meet the following criteria:

- The study's topic must relate to inheritance in Islam and computing. This encompasses various aspects, such as the development of software systems to support inheritance in Islam, the evaluation of existing systems, or the utilization of computer technology to analyze the topic.
- The study must undergo peer review or be a Ph.D. or master's thesis. Theses were included due to preliminary searches indicating a limited number of studies in the field.
- The study must be in English.

In terms of exclusion criteria, studies were only excluded if they were not fully available through the Saudi Digital Library website, Google, or Google Scholar. Although some studies were of low quality (e.g., lacked empirical evaluation), the author chose not to exclude them based on quality. This decision aligns with one of our objectives, which is to obtain an overview of the studies in the field, including their limitations.

2.2. Search strategy

2.2.1. Data sources

The data sources used included electronic databases and snowballing to ensure a comprehensive search. Initially, the search was conducted on IEEE Xplore, ACM Digital Library, and dblp, all well-known for their coverage of studies in the computing domain. Furthermore, the search extended to broader libraries such as ScienceDirect, Wiley Online Library, and Taylor & Francis.

Various keywords were tested, including "inheritance" combined with "Islam", "Mawaris" or "Mawarth" (the Romanized versions of the Arabic word "مواريث"), as well as "Faraid" (the Romanized versions of the Arabic word "فرائض"). However, the Romanized versions of the Arabic words did not yield any results. Therefore, the keywords "inheritance" and "Islam" were selected. The author refrained from adding keywords specific to the computing field, as searching IEEE Xplore, ACM Digital Library, and dblp typically yields studies related to computing. Furthermore, the preliminary search on broader libraries such as like ScienceDirect, Wiley Online Library, and Taylor & Francis showed a small number of results. Therefore, it was decided to manually filter the results related to computing.

2.2.2. Search query

The search utilized the keywords the keywords "Islam" and "inheritance", combined with the "AND" operator. However, in certain databases, the "AND" operator was not used due to lack of support or because it was implicitly applied within the database queries. When search queries produced a large number of results, available filters were applied to refine the search results, specifically targeting studies within the computing domain. For example, the "engineering and technology" filter in Taylor & Francis was utilized. The details of the search are provided in Table 1.

Table 1. Details of search

Databases	Search queries	Filters
IEEE Xplore	("All Metadata": Islam) AND ("All Meta-data": inheritance)	
ACM Digital Library	- [Abstract: islam] AND [Abstract: inheritance] - [Title: islam] AND [Title: inheritance] - [Keywords: islam] AND [Keywords: inheritance]	
dblp	Islam inheritance	
ScienceDirect	Title, abstract, keywords: Islam inheritance	
Wiley Online Library	- "Islam" in Abstract and "Inheritance" in Abstract - "Islam" in Title and "inheritance" in Title - "Islam" in Keywords and "inheritance" in Keywords	Computer Science
Taylor & Francis Online	- [Abstract: islam] AND [Abstract: inheritance] - [Publication Title: islam] AND [Publication Title: inheritance] - [Keywords: islam] AND [Keywords: inheritance]	[All Subjects: Engineering and Technology]

2.2.3. Snowballing

Snowballing was the primary strategy employed for locating studies, as the preliminary search revealed that the majority of relevant studies in the field were not indexed by the databases. This was likely because they were published in journals not included in the databases' indexes. The process of snowballing began by compiling an initial set of known studies, followed by examining their reference lists to identify older relevant studies (i.e. backward snowballing). Additionally, the "cited by" option provided by Google Scholar was utilized to identify newer relevant studies (i.e. forward snowballing).

2.2.4. Screening

The title and abstract of studies were used to determine their inclusion. This resulted in an initial set of potentially relevant studies. The eligibility of these studies, as determined by the title and abstract, was confirmed upon reading the full papers.

2.3. Data extraction

Table 2 presents the research questions alongside the corresponding data required to answer them. As the sole author, I independently extracted data using a standardized form to minimize bias and improve consistency. This process involved thoroughly reviewing each selected study to identify and record relevant information accurately.

Table 2. Research questions and required data

RQ	Data to be extracted
RQ1:	a. Publication year b. Type of study c. Publication venue d. Authors' names, affiliations and country
RQ2:	Application domain within Islamic inheritance
RQ3:	Computational technologies utilized
RQ4:	Type of empirical evaluation
RQ5:	Previously extracted data, reviewer's observations and interpretations after reviewing the studies

2.4. Quality assessment

No quality assessment was performed, as it is more crucial in systematic reviews compared to systematic maps, where quality assessment is deemed unnecessary [6]. However, since RQ4 pertains to the type of empirical evaluation applied, the author provides some observations regarding quality. These observations offer insights into the rigour and robustness of the empirical evaluation methods used, highlighting potential issues and guiding future research directions.

2.5. Analysis and synthesis

The author tabulated and organized each extracted data item into common themes using R code. Through categorization and analysis, patterns and connections within the data were discerned, shedding light on underlying trends and providing insights into the research topic. This analysis revealed areas of both consensus and divergence within the literature, ultimately enhancing the interpretation of findings and guiding future research directions.

3. RESULTS AND DISCUSSION

3.1. Search and screening

Overall, 31 relevant studies were identified. Four [2], [3], [7], [8] were initially identified through electronic database searches, but only one [8] was excluded because the full text was unavailable; the other three [2], [3], [7] were included (Table 3). The remaining 27 studies were uncovered through snowballing. However, one [9] was excluded due to unavailability, and one [10] was excluded for being in a non-peer-reviewed format (i.e., presentation). Furthermore, three additional studies were excluded during the second phase of screening (reading the full papers): one [11] was not in English, and the other two [12], [13] were not relevant to the review. In total, 25 relevant studies were included and reviewed using both methods. Table 4 provides references to both included and excluded studies.

Table 3. Search results

Databases	No. of results	No. of relevant studies	References
IEEE Xplore	5	0	
ACM Digital Library - Abstract	1	1	[7]
ACM Digital Library - Title	1	1	[7]
ACM Digital Library - Keywords	1	1	[7]
dblp	2	2	[2], [8]
ScienceDirect	16	1	[2]
Wiley Online Library - Abstract	1	1	[3]
Wiley Online Library - Title	5	0	
Wiley Online Library - Keywords	4	1	[3]
Taylor & Francis Online - Abstract	4	0	
Taylor & Francis Online - Title	9	0	
Taylor & Francis Online - Keywords	7	0	
Total distinct		4	[2], [3], [7], [8]

Table 4. Included and excluded studies

Category	Criteria	References
Included studies	Snowballing	[1], [14]-[34]
	Electronic databases	[2], [3], [7]
Excluded studies	No full access	[8], [9]
	Not peer-reviewed	[10]
	Not in English	[11]
	Not relevant	[12], [13]

Despite the small number of results obtained through electronic databases, the search was adequate as the choice of keywords used in the search queries was validated by analyzing the titles and keywords of the final set of included studies (Figure 1). The analysis confirmed our choice of keywords, as “Islamic” and “inheritance” were the most frequent.

Figure 1. Word cloud displaying frequent keywords assigned by authors, featuring terms with a minimum frequency of two occurrences

3.2. Data extraction

3.2.1. Publication per year

Figure 2 depicts the publication per year, illustrating research efforts spanning from as early as 2004 to as recently as 2024. Notably, there is a peak in counts for the years 2021 and 2022. Overall, this indicates sustained interest and ongoing development in facilitating Islamic inheritance through technological means.

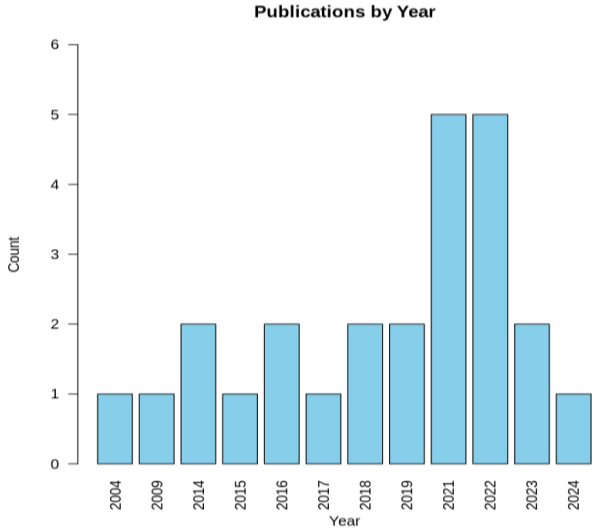

Figure 2. Publication per year on Islamic inheritance and computing technologies

3.2.2. Publication types and venues

Among the reviewed studies, the research output comprises 22 journal articles distributed across 21 different journals, along with two proceedings and one master’s thesis. Information about the journals and conferences can be found in Table 5. Notably, only one journal featured repeated publications, hosting two distinct studies. However, it is crucial to highlight that both studies involved shared authors. Additionally, the journals cover a diverse range of domains, including engineering, computer science, law, Islamic studies, materials science, and multidisciplinary research. This indicates that the topic of facilitating Islamic inheritance through technological means is approached from various disciplinary perspectives.

Upon referring to the journal websites, it was confirmed that seven journals are indexed in Scopus and two are indexed in ISI. Confirming the indexing status of journals in databases such as Scopus and ISI is crucial because it indicates that the journals adhere to certain quality standards and are subject to rigorous evaluation processes.

Table 5. Journals and conferences where the included studies were published

Name	Scopus or ISI indexed	# studies
Jurnal Kejuruteraan (Engineering Journal)	No	2
African Journal of Computing & ICT	No	1
Al-Ahwal: Jurnal Hukum Keluarga Islam (Al-Ahwal: Journal of Islamic Family Law)	Scopus	1
AL-Bahir Journal for Natural and Engineering Research and Studies	No	1
BITARA International Journal of Civilizational Studies and Human Sciences	No	1
Elkawnie: Journal of Islamic Science and Technology	No	1
Expert Systems	Both	1
Fara'id and Wealth Management	No	1
IAES International Journal of Artificial Intelligent (IJ-AI)	Scopus	1
Indonesian Journal of Electrical Engineering and Computer Science	Scopus	1
Information and Knowledge Management	No	1
International Journal of Artificial Intelligence (IJAI)	No	1
International Journal of Computer Science Trends and Technology (IJCST)	No	1
Journal of Advanced Research in Applied Sciences and Engineering Technology	Scopus	1
Journal of Advanced Research in Dynamical and Control Systems	No	1
Journal of Higher Education Institutions	No	1
Journal of Islamic Thought and Civilization	Scopus	1
Journal of King Saud University-Computer and Information Sciences	Scopus	1
Knowbase: International Journal of Knowledge in Database	No	1
World Journal of Advanced Research and Reviews	No	1
World Wide Journal of Multidisciplinary Research and Development	ISI	1
The Third International Conference on Physics of Materials & Nanotechnology, published in IOP Conference Series: Materials Science and Engineering	-	1
The 2017 International Conference on Data Mining, Communications and Information Technology	-	1

3.2.3. Authors and affiliations

Overall, a total of 68 researchers contributed to the studies, with only three of them (AHM Sajedul Hoque, Mohammad Osiur Rahman, and Sadia Tabassum from the Department of Computer Science and Engineering, University of Chittagong, Chittagong, Bangladesh) publishing more than one study.

Table 6 displays countries associated with the affiliations of researchers. Researchers affiliated with institutions in Indonesia and Malaysia made the most significant contributions to the included studies, indicating a strong regional interest and participation in the research topic. Moreover, researchers from various Islamic countries outside of Southeast Asia also contributed to the body of research, underscoring the global significance and relevance of the research topic.

Table 6. Country of researchers' affiliation, with each country counted only once in each study even if multiple co-authors share the same affiliation within the same study

Country	No. of studies	Country	No. of studies
Indonesia	7	Algeria	1
Malaysia	5	Jordan	1
Bangladesh	2	Kenya	1
Pakistan	2	Palestine	1
Iraq	2	Nigeria	1
Saudi Arabia	2	USA	1

In 17 studies, the authors with available details are affiliated with departments or schools related to computing, such as computer science, computer engineering, or informatics. Of these 17 studies, seven featured multidisciplinary collaboration: one [28] involving authors from the Department of Computer Science and the Department of Jurisprudence and Its Fundamentals, one [17] involving authors from the Department of Computer Science and the Department of Religions, one [21] involving the Department of Family Law and the Department of Informatics, one [1] involving the School of Computing and the School of Creative Industry Management and Performing Arts, one [33] involving the College of Computing, Informatics, and Media and the Institute of Malay Thought and Leadership, one [3] involving the College of Computer and Information Sciences and Elm company, and one [29] involving the Department of Computer Science & Engineering and the Department of Medical Physics. There was also a study [25] involving collaboration between authors from the Department of Mathematics and the Ethnoscience Research Center. Additionally, in one study [27], the author was affiliated with the Law College; in another [34], the authors the authors were associated with the Faculty of Islamic Studies; and in a third study [26], the author was part of Sharia Economic Applied Research and Training (SMART) Indonesia. Note that four studies lacked information about affiliations [15], [22], [30], [32].

Although there are some interdisciplinary collaborations, fostering more of these partnerships can significantly enrich research by integrating diverse perspectives, methodologies, and expertise. In particular, collaboration between researchers in computing and those specializing in Islamic law and studies can bring together legal and cultural perspectives, thereby enhancing technological solutions to the challenges of inheritance in Islam.

3.2.4. Application domain

Table 7 presents a comprehensive overview of the reviewed studies, encompassing their respective application domains, utilized computational technologies, and evaluations. These studies collectively investigate a diverse array of applications within the domain of Islamic inheritance. The most common application is automated calculations of wealth distribution, which involve both system development (14 studies [1], [3], [7], [14], [15], [17]-[20], [22], [23], [25], [29], [31]) and evaluating existing inheritance calculators (2 studies [27], [32]).

Table 7. Overview of reviewed studies

Ref	Application domain	Computational technologies	Evaluation
[14]	Calculating wealth distribution	Web-based system	No evaluation
[15]	Calculating wealth distribution	Web-based expert system	Testing the system on test cases developed by domain experts
[16]	Modeling aspects related to inheritance in Islam	Knowledge base model	No evaluation
[17]	Calculating wealth distribution	Rule-based expert system	No evaluation
[18]	Calculating wealth distribution	Decision table-based expert system	No evaluation; only one running example
[19]	Calculating wealth distribution	Decision tree-based expert system	No evaluation
[20]	Calculating wealth distribution	Expert system	No evaluation
[7]	Calculating wealth distribution	Web application	Satisfaction assessment with experts and testing the system using 100 cases
[21]	Knowledge acquisition of Islamic inheritance law (rules specifying the shares allocated to specific heirs)	Rule representation using rule-based Forward Chaining and Davis-Putman-Logemann-Loveland algorithms	Expert review
[1]	Facilitating learning and understanding of Islamic inheritance, and calculating wealth distribution	Mobile application “M-Faraid app”	No evaluation
[22]	Calculating wealth distribution	Mobile application	No evaluation
[23]	Providing knowledge about inheritance in Islam and calculating wealth distribution	Software system “Islamic Farayez System”	Comparison with human expert
[24]	Teaching calculation of wealth distribution	Android-based application “E-Mawaris”	Validity, practicality, and effectiveness test
[25]	Calculating wealth distribution	MATLAB computer program	No evaluation
[26]	Review Islamic Inheritance research in Islamic economics and finance	Sentiment analysis	Not applicable
[27]	Evaluating tools for calculating wealth distribution	Online inheritance calculators	Case study
[2]	Modeling aspects related to inheritance in Islam	Ontology	No evaluation
[28]	Processing textual representation of inheritance cases automatically	Text analyser	No evaluation
[29]	Calculating wealth distribution	Software system	Testing the system using 12 cases taken from [19]
[30]	Teaching Islamic inheritance and the distribution of wealth	Application “I-Waris”	Experiment with students
[3]	Calculating wealth distribution	Web-based expert system “TARIKA”	Testing the system using 150 cases along with usability testing
[31]	Calculating wealth distribution	Web-based expert system “E-FaraidTanah”	Questionnaire
[32]	Evaluating tools for calculating wealth distribution on special cases	Mobile applications	Case study
[33]	Identifying requirements to improve the existing Islamic Family Inheritance systems	Web-based Ancestry Platform	No evaluation
[34]	Identifying and analyzing of content related to Islamic inheritance	Social media (YouTube and TikTok)	No evaluation

Moreover, the scope of research extends beyond automated calculation to knowledge acquisition and modeling of inheritance-related aspects (3 studies [2], [16], [21]). Even in studies where the primary focus is on modeling, the automated calculations of wealth distribution are mostly the intended application. For instance, in the study by Zouaoui *et al.* [2], where the primary focus is on modeling various aspects of inheritance, the authors refer to automated calculations of wealth distribution as the intended application. Other studies focus on educational aspects such as analyzing the effectiveness of an application in increasing student understanding of the subject (2 studies [24], [30]). Additionally, fewer studies concentrate on identifying requirements for improving existing systems (1 study [33]), exploring content related to the subject (1 study [34]), processing textual data from inheritance cases (1 study [28]), and reviewing and analyzing existing research (1 study [26]).

3.2.5. Computational technologies

Table 7 demonstrates a variety of technologies aimed at facilitating understanding and application of Islamic inheritance law. These technologies include expert systems, web-based systems, mobile applications, knowledge bases, and text analyzers. Studies investigating the calculation of wealth distribution reveal a multifaceted approach to addressing this task. Expert systems have been prominently featured in this domain, with four studies dedicated to their utilization. However, the landscape is further enriched by a diverse array of applications spanning different platforms, including computers, mobile devices, and the web.

3.2.6. Evaluation

A significant limitation highlighted in Table 7 is the lack of evaluation in many studies. Several studies mention the proposal or development of computational solutions without subsequent evaluation or testing. For instance, in the context of wealth distribution calculation, eight out of 14 studies lack empirical validation. Even in studies employing empirical evaluation, such as testing on test cases developed by domain experts or comparison with human expert opinions, there are notable limitations in the evaluation methods and reporting across the studies. For example, there is a lack of detailed information on evaluation procedures, such as the instructions provided to human experts or the rationale behind the selection of some test cases, making it unclear how complete or trusted the systems are. In general, more rigorous empirical testing and standardized evaluation criteria are needed to validate the effectiveness and reliability of computational solutions in this domain.

4. CONCLUSION

In conclusion, this systematic mapping offers an overview of the landscape within the domain of Islamic inheritance and computing technologies. The publication trends underscore sustained interest and development, spanning from 2004 to 2024. Researchers from diverse disciplines and countries contribute to this field, with a notable concentration of researchers from Southeast Asia and backgrounds in computing. The mapping reveals notable interest in the development of computational artifacts aimed at facilitating the computation of inheritance shares, including expert systems, web-based systems, and mobile applications.

One of the limitations identified is the absence of empirical evaluation in the reviewed studies. In those where evaluation exists, we observed shortcomings in reporting and the absence of agreed-upon evaluation criteria. However, this mapping did not extract detailed information about experimental settings, and therefore, further studies are needed to validate the rigor of the evaluation process.

These observations collectively highlight the multifaceted nature of research and development efforts aimed at leveraging technology to address challenges related to Islamic inheritance. They also underscore the potential for further collaboration, evaluation, and innovation in this field.

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The authors state no conflict of interest.

DATA AVAILABILITY

The data supporting the findings of this study are available upon request.

REFERENCES

[1] A. N. Zulkifli, Q. A. Batiha, and M. M. Qasim, "Design and development of M-Faraid: an islamic inheritance mobile app," *Journal of Advanced Research in Dynamical and Control Systems*, vol. 10, no. 10 Special Issue, pp. 1569–1575, 2018.

[2] S. Zouaoui and K. Rezeg, "Islamic inheritance calculation system based on Arabic ontology (AraFamOnto)," *Journal of King Saud University - Computer and Information Sciences*, vol. 33, no. 1, pp. 68–76, Jan. 2021, doi: 10.1016/j.jksuci.2018.11.015.

[3] M. A. Mostafa, M. Al-Qurishi, A. Al-Amri, M. S. Aksoy, and A. Emam, "Novel graphical family tree representation to develop an interactive expert system," *Expert Systems*, vol. 39, no. 10, p. e13077, Dec. 2022, doi: 10.1111/exsy.13077.

[4] A. R. Zadeh, "Artificial Intelligence and Modern Information Technologies Applications in Islamic Sciences: a survey," *International Journal on Perceptive and Cognitive Computing*, vol. 9, no. 2, pp. 48–61, Jul. 2023, doi: 10.31436/ijpcc.v9i2.403.

[5] B. Kitchenham and S. Charters, "Guidelines for performing systematic literature reviews in software engineering," EBSE Technical Report, Keele University and University of Durham, 2007.

[6] K. Petersen, S. Vakkalanka, and L. Kuzniarz, "Guidelines for conducting systematic mapping studies in software engineering: an update," *Information and Software Technology*, vol. 64, pp. 1–18, Aug. 2015, doi: 10.1016/j.infsof.2015.03.007.

[7] I. Bin Awae and S. Limsiroratana, "Inheritance management method for set of indivisible item based on Islamic law," in *Proceedings of the 2017 International Conference on Data Mining, Communications and Information Technology*, New York, NY, USA: ACM, May 2017, pp. 1–6. doi: 10.1145/3089871.3089881.

[8] A. H. M. S. Hoque, S. Tabassum, R. Mustafa, M. S. Chowdhury, and M. O. Rahman, "An analysis of Islamic inheritance system under object-oriented paradigm," in *Machine Intelligence and Emerging Technologies*, M. S. Satu, M. A. Moni, M. S. Kaiser, and M. S. Arefin, Eds., Cham: Springer, 2023, pp. 216–225. doi: 10.1007/978-3-031-34622-4_17.

[9] A. N. Akkila, "Expert system for inheritance in islam," Technical Report, *2005*.

[10] H. B. Harani, "Effective Faraid system using rule based." Accessed: Oct. 08, 2024. [Online]. Available: https://www.slideshare.net/slideshow/effective-faraid-system-using-rule-based/125723904

[11] I. Zufria and M. H. Azhari, "Web-based applications in calculation of family heritage (science of faroidh)," *Query: Journal of Information Systems*, vol. 1, no. 1, pp. 50–59, 2017.

[12] D. Aydemir, "Division of inheritance," 2021.

[13] M. I. Muhammad, *Inheritance in Islam: an attempt to simplify one of the complex branches of Shari'ah*. Minna, Nigeria: Sadaqatu Tayyibatun Foundation, 2012.

[14] M. Z. Asghar, F. M. Kundi, and A. R. Khan, "Inheritance evaluation system using Islamic law," *Journal of Higher Education Institutions*, vol. 9, no. 6, pp. 163–171, 2004.

[15] H. H. M. Nafed, "Web based expert system for i-Faraid," M.S. thesis, Universiti Utara Malaysia, 2009.

[16] H. C. Mahmoud, J. Orero, and A. Luvanda, "A knowledgebase model for islamic inheritance," *Information and Knowledge Management*, vol. 4, no. 9, pp. 1–8, 2014.

[17] R. G. Jimoh, I. R. Adebayo, A. O. Ameen, and H. O. Ahmad, "Design of an expert system to calculate inheritance shares based on Islamic law," *African Journal of Computing & ICT Islamic Law. Afr J. of Comp & ICTs*, vol. 7, no. 2, pp. 151–156, 2014.

[18] H. F. Al-Shahad and Z. AbdAl-Retha, "Computation of inheritance share in Islamic law by an expert system using decision tables," *Quarterly Adjudicated Journal for Natural and Engineering Research and Studies*, vol. 1, no. 1, pp. 105–114, 2015.

[19] A. F. Andikos, G. Ali, and W. A. Purnomo, "Expert system for decision support division of inheritance according to Islamic law," *IAES International Journal of Artificial Intelligence (IJ-AI)*, vol. 5, no. 3, pp. 89–94, Aug. 2016, doi: 10.11591/ijai.v5.i3.pp89-94.

[20] A. N. Akkila and S. S. A. Naser, "Proposed expert system for calculating inheritance in Islam," *World Wide Journal of Multidisciplinary Research and Development*, vol. 2, no. 9, pp. 38–48, 2015.

[21] S. Khosyi'ah, M. Irfan, D. S. Maylawati, and O. S. Mukhlas, "Analysis of rules for Islamic inheritance law in Indonesia using hybrid rule-based learning," *IOP Conference Series: Materials Science and Engineering*, vol. 288, p. 012133, Jan. 2018, doi: 10.1088/1757-899X/288/1/012133.

[22] N. Shaik, A. H. Asiri, H. M. Hussein, H. A. Alshehri, and Z. Al-ahmari, "Inheritance calculator," *International Journal of Computer Science Trends and Technology (IJCST)*, vol. 7, no. 6, pp. 4–8, 2019.

[23] S. Tabassum, A. H. M. Sajedul Hoque, S. Twahura, and M. Osiur Rahman, "Developing an Islamic Farayez system applying software engineering," *Jurnal Kejuruteraan*, vol. 31, no. 1, pp. 25–38, Apr. 2019, doi: 10.17576/jkukm-2019-31(1)-04.

[24] A. Anwar, "Application for calculation of Islamic sharia inheritance based on Android for mawaris fiqh courses," *Knowbase : International Journal of Knowledge in Database*, vol. 1, no. 2, pp. 98–105, Dec. 2021, doi: 10.30983/ijokid.v1i2.4956.

[25] S. Arif, R. Muliana, and S. M. Yuni, "The computer program development to determine the shares of inheritance for three types of heir," *Elkawnie*, vol. 7, no. 1, pp. 84–95, Jul. 2021, doi: 10.22373/ekw.v7i1.7777.

[26] A. S. Rusydiana, "Islamic inheritance: a sentiment analysis on 80 literatures," *Faraid and Wealth Management*, vol. 1, no. 1, 2021.
[27] S. A. Cheema, "Distribution of inheritance under Islamic law: an appraisal of online inheritance calculators," *SSRN Electronic Journal*, 2020, doi: 10.2139/ssrn.3674913.
[28] A. K. Al-Mashhadany, M. B. Mohammed, and M. A. Alrawi, "Inheritance issues' features extraction using Arabic text analyzer (IFAA)," *Indonesian Journal of Electrical Engineering and Computer Science (IJEECS)*, vol. 28, no. 1, pp. 611–624, Oct. 2022, doi: 10.11591/ijeecs.v28.i1.pp611-624.
[29] A. H. M. S. Hoque, S. Tabassum, A. Nazib, R. Mustafa, and M. O. Rahman, "An effective software architecture of Islamic inheritance system employing structured paradigm," *Jurnal Kejuruteraan*, vol. 34, no. 6, pp. 1111–1124, Nov. 2022, doi: 10.17576/jkukm-2022-34(6)-12.
[30] K. Kosim, "The effectiveness of I-Waris application to increase inheritance understanding based on Islamic law," *World Journal of Advanced Research and Reviews*, vol. 14, no. 1, pp. 368–376, Apr. 2022, doi: 10.30574/wjarr.2022.14.1.0324.
[31] M. S. M. Saad and R. M. Rasli, "Web based expert system in area & land value calculation and faraid distribution," *International Journal of Artificial Intelligence*, vol. 9, no. 2, pp. 83–89, Dec. 2022, doi: 10.36079/lamintang.ijai-0902.468.
[32] M. Billah, "Complete and incomplete calculation: expert systems apps on the special cases of Islamic inheritance law," *Al-Ahwal: Jurnal Hukum Keluarga Islam*, vol. 16, no. 2, pp. 180–210, Oct. 2023, doi: 10.14421/ahwal.2023.16201.
[33] M. Mokhsin, S. N. F. S. Hamidulfuad, E. N. M. Ibrahim, M. H. M. Som, F. H. A. Razak, and H. A. Halim, "Design requirements on web-based ancestry platform for Islamic family inheritance in Malaysia," *Journal of Advanced Research in Applied Sciences and Engineering Technology*, vol. 32, no. 3, pp. 26–42, Oct. 2023, doi: 10.37934/araset.32.3.2642.
[34] A. Sohpian, A. Rahman, N. Lizza, M. Said, and R. M. Rasit, "Teaching and learning faraid–Sijil Tinggi Persekolahan Malaysia (STPM) level using mobile learning apps (TikTok and YouTube)," *BITARA International Journal of Civilizational Studies and Human Sciences*, vol. 7, no. 1, pp. 229–238, 2024.

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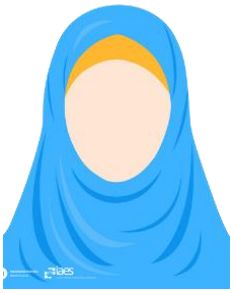

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