

Development of the Ijma Ulama Mobile Application as an Information Medium for Islamic Legal Foundations

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ABSTRACT

Purpose of the study: This study aims to develop an Android-based mobile application that provides accessible and structured information on ijma' ulama as a source of Islamic law. The application is designed to integrate information on ijma', the Qur'an, and hadith, while providing search features to facilitate users' access to relevant Islamic legal information.

Methodology: The study employed software development research with a library research approach. The application was developed using the Waterfall model, consisting of requirement, analysis, design, coding, testing, and maintenance stages. Development was conducted using Android Studio, with Firebase as the database and Adobe Photoshop CS5 for interface design. Functional testing was performed using Blackbox Testing on an Android smartphone.

Main Findings: The study produced an Android-based mobile application consisting of five main components: the main menu, Qur'an menu, hadith menu, search menu, and profile menu. The application integrates ijma' information with Qur'anic and hadith data and provides search and indexing features. Blackbox Testing covered eight main functional scenarios, including the main menu, search, hadith details, surah details, hadith menu, surah menu, profile, and ijma' interface. All tested functions were successfully executed according to the expected results.

Novelty/Originality of this study: The novelty lies in integrating ijma' ulama information, Qur'anic and hadith data, and search functionality within a single Android-based application specifically designed as an information medium for Islamic legal foundations. Unlike previous studies that mainly examine ijma' substantively or develop applications for Islamic learning, this study connects Islamic legal information with mobile information technology in one structured platform.

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1. INTRODUCTION

The Qur'an serves as the primary source of Islamic teachings and law, while the Hadith acts as a subsequent source that elucidates various provisions found within the Qur'an [1]. As the lives of Muslims evolve, not all issues are directly addressed in the Qur'an and Hadith, necessitating other methods of legal

determination [2]. One significant source of Islamic law in this context is *ijma'* the consensus reached by *mujtahids* (qualified jurists) regarding a Sharia ruling on a specific issue following the passing of the Prophet Muhammad (PBUH) [3]. *Ijma'* plays a crucial role in understanding the evolution of Islamic legal rulings, as it involves the process by which scholars reach a consensus in response to emerging societal issues.

Understanding the consensus of Islamic scholars (*ijma'*) is not limited to conceptual aspects but also requires access to information sources that can help the public understand the relationship between a particular issue and the legal basis underlying it [4]. Previous research has found that information retrieval concerning *ijma'* is still conducted through books, explanations from lecturers and Islamic scholars, as well as by examining the Qur'an and Hadith separately. This condition may make it difficult for the public to obtain information quickly and understand the meaning of *ijma'* in greater detail, particularly for those who lack sufficient ability to navigate Islamic legal sources [5]. This issue indicates the need for an information medium that can integrate information on *ijma'* with sources from the Qur'an and Hadith in a more accessible form.

The development of information technology provides opportunities to deliver religious information through digital devices in a more practical manner [6]. In this study, Android-based smartphones are considered an appropriate medium for supporting access to information on the consensus of Islamic scholars (*ijma'*) because applications can be designed to provide structured information along with search features. Previous research presented in a thesis indicates that the developed system is intended to provide menus for the Qur'an, Hadith, search functions, and information on *ijma'*, enabling users to retrieve information based on available surahs and Hadith. Thus, the use of mobile applications serves not only as a means of storing information but also as a medium for facilitating the process of retrieving and understanding basic information on Islamic legal sources.

Several previous studies have discussed *ijma'* from the perspective of Islamic law. Hajar examined *ijma'* in the field of Islamic criminal law, focusing on the offense of *zina* in the book *Al-Majmu'*, with the study primarily directed toward identifying legal rulings that have been agreed upon regarding specific issues [7]. Meanwhile, Bahsoan examined the position of *ijma'* as a source of Islamic law in relation to contemporary Islamic economic fatwas in Indonesia [8]. These two studies demonstrate that *ijma'* has been examined in various contexts of Islamic law; however, their focus remains on substantive legal studies and has not been directed toward developing digital media that enables the public to access information on *ijma'* practically through mobile devices [9].

This research gap provides the basis for the development of this study. Previous studies have primarily positioned *ijma'* as an object of Islamic legal inquiry, whereas this study combines the substance of *ijma'* information with the development of an Android-based information system [10], [11]. In addition, this study not only presents information about *ijma'* but also connects it with Qur'anic and Hadith data and provides a search feature to help users find the information they need [12]. The system is developed through the Waterfall stages, consisting of requirements, analysis, design, coding, testing, and maintenance, while functional testing is conducted using Black Box Testing. This approach contributes to the technological aspect by translating the need for access to Islamic legal information into a structured mobile application [13].

The novelty of this study lies in the development of a mobile application specifically designed to provide information on the consensus of Islamic scholars (*ijma'*) as a medium for accessing information on the foundations of Islamic law by integrating access to the Qur'an, Hadith, *ijma'* information, and a search feature within a single application [14]. Unlike previous studies that have focused on discussing *ijma'* within specific areas of Islamic law, this study positions information technology as a means of supporting public access to information on *ijma'* in a more practical manner [15]. The urgency of this study is further demonstrated by the need to provide a medium that can help the public obtain information on *ijma'* without relying entirely on manual searches across various printed sources. Therefore, the development of this mobile application is expected to serve as an alternative information medium that facilitates access to knowledge concerning *ijma'* and the foundations of Islamic law.

Based on the identified problems, research gaps, and needs, this study aims to develop an Android-based mobile application that provides information on the consensus of Islamic scholars (*ijma'*) as a medium for accessing information on the foundations of Islamic law [16]. The application is developed to present Qur'anic and Hadith information related to *ijma'*, provide a search feature based on the available data, and offer general information regarding the role of *ijma'*. Furthermore, the application is tested to ensure that each designed function operates according to the system requirements [17]. Accordingly, this study is directed toward producing a digital medium that facilitates access to information on *ijma'* and supports the use of technology in providing Islamic legal information.

2. RESEARCH METHOD

2.1 Research Design

This study employs a software development research design using a library research approach [18]. Library research is employed because the primary data underlying the application development are obtained from various literature sources related to *ijma'* among Islamic scholars, the Qur'an, Hadith, and Islamic law. The research adopts a scientific approach based on the integration of science and technology [19]. Literature data are used to identify the information required for the application and serve as the basis for developing the content presented to users. The application was developed using the Waterfall model, which follows a systematic and sequential development process [20]. The development stages include system requirements, analysis, design, coding, testing, and maintenance. This model was employed to translate the information requirements concerning *ijma'* among Islamic scholars into the design of a structured Android-based mobile application through a systematic and sequential process.

2.2 Research Subjects and Objects

The subjects of this study are not respondents or human populations but rather information sources used as the basis for developing the application content. These sources include Hadith books, books, journals, encyclopedias, scholarly writings related to *ijma'* among Islamic scholars, and relevant online information sources. The object of the study is an Android-based mobile application developed to provide information on *ijma'* as a foundation of Islamic law, including Qur'anic information, Hadith, and a search feature. Since this study employs library research, it does not define a population and sample of respondents as in quantitative research. Data are selected based on the relevance of the sources to the topic of *ijma'* and the information requirements to be implemented into the system.

2.3 Data Sources

The data sources in this study consist of literature data and supporting data obtained from online sources. Literature data were obtained from Hadith books, books, journals, encyclopedias, and other literature discussing *ijma'* among Islamic scholars and Islamic law. In addition, data were collected from books containing compilations of *ijma'* among Islamic scholars and relevant information sources available on the internet. These data were used to develop the informational content presented in the application.

2.4 Data Collection Techniques

Data collection was conducted through observation and literature review:

Observation was conducted by examining the conditions and methods used by the public to obtain information about *ijma'* among Islamic scholars. The observation focused on identifying difficulties in obtaining information, user needs, and the types of information required for system development. The results of the observation were used as a basis for determining the functional requirements of the application.

A literature review was conducted by searching for, selecting, and collecting various sources related to the research topic. The sources included classical Islamic texts, books, journals, encyclopedias, scholarly writings, and other relevant references supporting the preparation of materials on *ijma'* among Islamic scholars. The collected data were subsequently screened based on their relevance to the materials to be incorporated into the application.

2.5 Research Instruments

The research instruments consisted of hardware and software used during the application development and testing processes. The hardware included a Toshiba laptop with an Intel Core i3-2348U processor, 2 GB of RAM, and a 300 GB hard disk, as well as an LG G3 Stylus smartphone for application implementation and testing. The software consisted of Windows 7 32-bit as the operating system, Android Studio as the application development environment, and Adobe Photoshop CS5 for interface design. These instruments supported the development, implementation, and testing activities throughout the study. The specifications and functions of the research instruments are presented in Table 1.

Table 1. Research Instruments

No.	Instrument	Specification/Description	Function
1	Laptop	Toshiba, Intel® Core™ i3-2348U 2.30 GHz, 2 GB RAM, 300 GB HDD	Application development and testing
2	Smartphone	LG G3 Stylus	Application implementation and testing on an Android device
3	Operating System	Windows 7 32-bit	Development environment
4	Android Studio	Android development software	Application coding and development
5	Adobe Photoshop CS5	Graphic design software	Designing application interface elements

Table 1 summarizes the hardware and software used to support the application development process. The laptop and Android Studio served as the primary development tools, while the smartphone was used to implement and test the application on an Android device. Windows 7 provided the operating environment, and Adobe Photoshop CS5 supported the design of application interface elements. The combination of these instruments enabled the development and testing processes to be carried out according to the requirements of the study.

2.6 Data Processing and Analysis Techniques

Data processing was conducted through data reduction and data coding stages. Data reduction involved selecting information relevant to the research topic and application requirements. Subsequently, coding was performed by assigning specific codes to the collected data so that the information could be classified according to the main research issues and more easily traced. The processed data were analyzed using qualitative analysis techniques. The analysis involved collecting, selecting, classifying, and recording data based on their relevance to the research problems [21]. The results of the analysis were then used to determine the information requirements and system requirements for application development.

2.7 Application Development Procedure

Application development was carried out using the Waterfall model, which consists of six main stages: System Requirements, Analysis, Design, Coding, Testing, and Maintenance. Each stage was executed sequentially to ensure the development process proceeded systematically and in accordance with the established requirements. The workflow of the application development stages using the Waterfall model is illustrated in Figure 1.

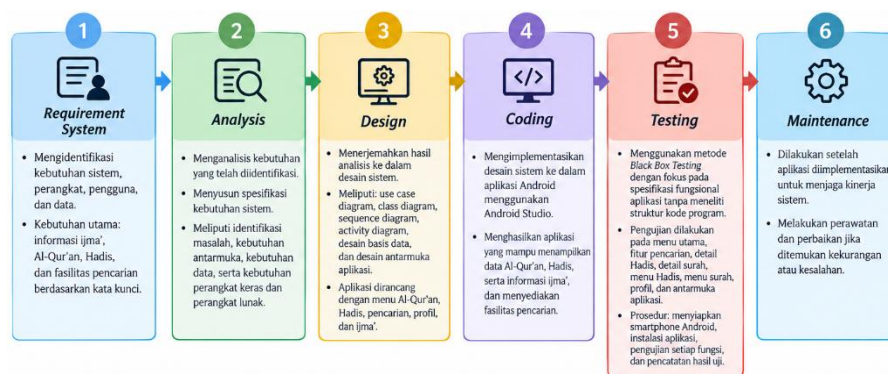


Figure 1. Application Development Stages Using the Waterfall Model

Based on Figure 1, the application development process begins with the System Requirements stage to identify the needs regarding the system, devices, users, and data. Next, the Analysis stage is conducted to analyze these requirements and formulate system specifications. The Design stage is used to architect the application's structure and interface, which are subsequently implemented during the Coding stage using Android Studio. Once development is complete, the Testing stage utilizing the Black Box Testing method is carried out to ensure that every application function operates according to specifications. The final stage is Maintenance, performed to rectify errors or address shortcomings identified after the application has been put into use. Thus, these six stages form the foundation of the application development process, ensuring the resulting application functions in alignment with user needs and development objectives.

2.8 System Testing Technique

System testing was conducted using Black Box Testing. This method was employed to ensure that the inputs, processes, and outputs of the application operated according to the specified functional requirements. Testing was performed by examining each feature through usage scenarios without inspecting the internal program code. Based on the testing results, the main menu, search feature, Hadith details, surah details, Hadith menu, surah menu, profile, and application interface were successfully executed according to the expected results.

3. RESULTS AND DISCUSSION

The results of the study show that an Android-based mobile application has been developed as an information medium concerning ijma' among Islamic scholars as one of the foundations of Islamic law. The application was developed based on the identification of information requirements, which indicated the need for

a medium that could help users obtain information on *ijma'* in a more accessible and structured manner. The resulting application consists of five main sections: the main menu, Qur'an menu, Hadith menu, search menu, and profile menu. The Qur'an and Hadith menus are used to display data in list form, while the profile menu provides a general explanation of *ijma'* among Islamic scholars. These development results demonstrate that the main functional requirements formulated in the study were successfully translated into a mobile application that can be used on Android devices.

The search feature is one of the main outcomes of the application development, as it enables users to retrieve information based on the available categories. For Qur'anic searches, users can enter the surah name and verse, while for Hadith searches, users can enter the Hadith title. The system then displays the search results in a list corresponding to the user's input and provides access to the detail page. The available detailed information includes Hadith data, *matn*, *ijma'*, and explanations, while the surah data display information about the surah, verses, and *ijma'*. In addition, the application provides a Hadith index based on titles and narrators, as well as a surah index based on surah titles and verse numbers. This structure demonstrates that the application functions not only as an information repository but also provides navigation and search mechanisms to facilitate users in retrieving relevant information.

The implementation of the application resulted in several interconnected interfaces, including the splash screen, main menu, search menu, Qur'an and Hadith index pages, detail pages, profile page, and side menu. The application uses a Firebase database, allowing data to be accessed in real time; therefore, an internet connection is required to access the database. From a system design perspective, the application was developed through requirements analysis, use case design, class diagram, sequence diagram, activity diagram, database design, and interface design before being implemented as an Android system [22]. These results demonstrate that information requirements that were previously dispersed across various sources have been integrated into a single application environment with a clear menu structure and user flow.

Functional testing was conducted using the Black Box Testing method by examining each function based on its inputs and outputs without inspecting the internal structure of the program code. The testing covered the main menu, search menu, Hadith index details, surah index details, Hadith menu, surah menu, profile menu, and *ijma'* menu interface [23]. All testing scenarios in the thesis were accepted, resulting in a total of eight main scenarios that were successfully executed according to the expected outputs. These results indicate that the basic functions of the application operated functionally in accordance with the requirements established during the development process. Thus, the technical objective of the study, namely developing an Android application capable of displaying and retrieving information on the Qur'an, Hadith, and *ijma'* among Islamic scholars, was achieved at the functional system level.

Functional testing was conducted to verify whether the main features of the developed application operated according to their intended functions. The testing covered eight features, including the main menu, search function, Hadith and surah details, Hadith and surah menus, profile, and *ijma'* menu interface. Each feature was tested using a predefined scenario by observing the system response to the corresponding user action. The results showed that all tested features were successfully executed and received an Accepted status. The detailed functional testing results are presented in Table 2.

Table 2. Functional Testing Results of the Application

No.	Tested Feature	Testing Scenario	Result
1	Main Menu	Selecting the main menu	Accepted
2	Search	Entering data based on the search category	Accepted
3	Hadith Details	Selecting a Hadith to view its details	Accepted
4	Surah Details	Selecting a surah to view its details	Accepted
5	Hadith Menu	Opening the Hadith list	Accepted
6	Surah Menu	Opening the surah list	Accepted
7	Profile	Opening information about <i>ijma'</i>	Accepted
8	<i>Ijma'</i> Menu Interface	Opening and selecting interface functions	Accepted

Results in Table 2 indicate that all eight tested features operated successfully according to the defined testing scenarios. No feature produced an unsuccessful response during the functional testing process. These results demonstrate that the core application functions were implemented and operated as expected. Therefore, the developed application was considered functionally suitable for further evaluation and use within the scope of the study.

The research findings indicate that mobile application development can serve as a relevant approach to expanding access to Islamic information [24]. This finding is consistent with research on the digitization of Qur'anic knowledge, which shows that digital platforms make religious knowledge easier to search, carry, and

access in everyday life. The study also emphasizes that digital technology has established a new infrastructure for disseminating Qur'anic knowledge, while simultaneously highlighting the need to consider the authority and legitimacy of religious sources [25]. These findings are relevant to the present study because the developed application transforms information on ijma', the Qur'an, and Hadith from sources that were previously accessed largely through manual searches into information that can be retrieved through mobile devices. Thus, the contribution of this application extends beyond the technical aspect to providing a digital channel for accessing Islamic legal knowledge in a more practical manner.

Findings of this study are also consistent with previous research that developed various Android applications for Islamic information and learning purposes. Research on the development of Islamic Mobile Learning demonstrates that Android platforms can be used to provide Islamic educational content within a more structured digital environment [26], [27]. Other studies on Qur'an and Hadith learning applications have also shown that mobile technology can be used to present religious materials in a more accessible manner for users. However, previous studies have generally emphasized Islamic learning activities, exercises, or the presentation of specific religious materials, while limited attention has been given to applications that specifically organize information on ijma' and connect it with Qur'anic and Hadith sources within a single mobile platform [28]. This gap indicates that existing Islamic information applications have not sufficiently addressed the integration of ijma' as a foundation of Islamic law with its related textual sources in an accessible Android-based environment. The present study addresses this gap by developing a mobile application that provides integrated access to information on ijma', the Qur'an, and Hadith through a dedicated search and information retrieval process.

Novelty of this study lies in the integration of information on ijma' among Islamic scholars, the Qur'an, Hadith, and a search feature within a single Android application specifically designed to support access to information on the foundations of Islamic law. This approach differs from previous studies on ijma', which have primarily focused on substantive aspects, such as the examination of ijma' in Islamic criminal law and its position as a source of law in Islamic economic issues. These previous studies provide a conceptual foundation regarding the importance of ijma' but have not produced digital media that integrates such information into a mobile application. Therefore, this study adds value by bringing together Islamic legal studies and information technology. The novelty can also be observed in the search feature, which allows users to retrieve Qur'anic or Hadith data and then access the related ijma' information, thereby presenting the relationship between textual sources and legal information within a single application workflow.

From an implications perspective, the findings indicate that the application has the potential to serve as a supporting medium for accessing Islamic information, particularly for users who require more practical access to information on ijma' [29]. However, these implications should be interpreted within the scope of the research findings, as the testing focused on system functionality rather than measuring user acceptance, usability, improvements in understanding, or pedagogical accuracy through expert validation [30]. Another limitation is that the amount of ijma', Hadith, and surah data available in the application does not yet cover all relevant information, while the database still requires further development, particularly in providing scholars' responses or explanations regarding the Hadith and surahs presented. The application also depends on an internet connection because it uses Firebase as its database. Therefore, future research should expand the scope of the data, improve content validation through experts in Islamic law or Hadith studies, and conduct user-based evaluations such as usability testing, acceptance testing, and user experience evaluation so that the benefits of the application can be demonstrated not only technically but also from practical and academic perspectives.

4. CONCLUSION

This study resulted in an Android-based mobile application developed as an information medium for ijma' among Islamic scholars to support the understanding of the foundations of Islamic law. The application provides information on the Qur'an, Hadith, and ijma', along with a search feature that enables users to retrieve information based on the available data. The application was systematically developed using the Waterfall model, covering requirements analysis, design, implementation, and system testing. The testing results using the Black Box Testing method showed that all tested core functions, including the main menu, search feature, Hadith details, surah details, Hadith menu, surah menu, profile, and ijma' interface, operated according to the expected functions. Therefore, the research objective of developing a digital medium that provides access to information on ijma' through Android devices was achieved.

The findings also indicate that integrating information on the Qur'an, Hadith, and ijma' within a single application provides an alternative for accessing information in a more structured manner compared with searching across multiple sources separately. Nevertheless, the developed application has limitations in terms of the coverage of ijma' data, which does not yet fully encompass all relevant information, as well as its dependence on an internet connection due to the use of Firebase as the database. Future research can expand the scope and depth of the data, conduct content validation involving experts in Islamic law and Hadith studies, and incorporate usability testing and user evaluation to obtain stronger evidence regarding the application's ease of

use and acceptance. Further development may also include interface refinement, search optimization, and the provision of more comprehensive information so that the application can evolve into a more complete digital medium for Islamic legal information and be utilized more broadly.

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