



Grounding Surah Al-Fatihah as a Foundational Framework for Transforming Binary Thought toward Progressive, National, and Cultural Islam through a Time-Based Fourier Series Approach

Bambang Judi Bagiono¹, Warno², Hendarto D.³, Bambang Subana Afandi⁴, M. Firdaus⁵

^{1,2,3,4,5} Universitas Saintek Muhammadiyah, Jakarta, Indonesia

Article Info

Article History

Submitted 17-10-2025

Revised 05-11-2025

Accepted 15-12-2025

Published 11-01-2026

Keywords:

Surah Al-Fatihah;

Binary thinking;

Progressive Islam;

National Islam;

Cultural Islam

Correspondence:

bambangjudibagiono
@gmail.com

Abstract

This article aims to position Surah Al-Fatihah as a foundational epistemological framework for transforming binary thinking toward Progressive, National, and Cultural Islam. Methodologically, this study adopts an interdisciplinary qualitative approach that integrates thematic Qur'anic interpretation, philosophy of knowledge, and a conceptual analogy derived from time-based Fourier series. The findings suggest that a time-based Fourier approach enables a paradigmatic shift from rigid binary logic toward an integrative spectral model of Islamic thought. This transformation supports the development of Progressive Islam that engages constructively with science and modernity, National Islam that harmonizes religious values with constitutional frameworks, and Cultural Islam that embraces local wisdom as an authentic expression of universal Islamic principles. Consequently, Surah Al-Fatihah emerges as an epistemic, ethical, and civilizational foundation for an inclusive, contextual, and future-oriented Islamic worldview.

Artikel ini bertujuan untuk merumuskan Surah Al-Fatihah sebagai pijakan transformasi epistemologis dasar dari binerisitas menuju Islam berkemajuan, berkebangsaan, dan berbudaya. Pendekatan metodologis yang digunakan bersifat interdisipliner dengan mengintegrasikan tafsir tematik Al-Qur'an, filsafat ilmu, dan analogi matematis melalui deret Fourier berbasis waktu. Hasil kajian menunjukkan bahwa pendekatan deret Fourier berbasis waktu memungkinkan terjadinya transformasi paradigma keislaman dari logika hitam-putih menuju logika spektral yang integratif. Transformasi ini membuka ruang bagi Islam berkemajuan yang responsif terhadap ilmu pengetahuan dan perubahan zaman, Islam berkebangsaan yang selaras dengan konstitusi dan realitas negara, serta Islam berbudaya yang menghargai kearifan lokal sebagai ekspresi nilai universal Islam. Dengan demikian, Surah Al-Fatihah berfungsi sebagai fondasi epistemologis, etis, dan peradaban dalam membangun Islam yang inklusif, kontekstual, dan berorientasi masa depan.

A. INTRODUCTION

Surah Al-Fatiyah occupies a central position in Islamic theology, spirituality, and religious practice. As *Umm al-Kitab* (the Mother of the Book), Al-Fatiyah serves not only as the textual opening of the Qur'an but also as a conceptual foundation encompassing divine principles, ethical orientation, and human existential purpose (Shihab, 2002, pp. 33–36). Nevertheless, in everyday religious practice, Al-Fatiyah is often reduced to repetitive ritual recitation, while its epistemological and transformative dimensions remain largely unexplored.

At the same time, contemporary Islamic discourse continues to be dominated by binary modes of thought. Binary thinking constructs reality through rigid oppositions such as belief-disbelief, right-wrong, religion-culture, and sacred-profane. Although such binaries may serve normative functions within theology and jurisprudence, they frequently evolve into absolutist frameworks that restrict dialogue, inhibit intellectual creativity, and contribute to social fragmentation (Arkoun, 1994, pp. 23–28). Within pluralistic societies and modern nation-states, binary frameworks prove insufficient for addressing the complexity of social, national, and cultural realities.

Several contemporary Muslim thinkers have therefore emphasized the need for a paradigmatic shift toward a more contextual, historical, and integrative understanding of Islam. Islam should not be perceived merely as a static normative system, but as a living tradition of values that continuously interacts with the dynamics of time and space (Nasr, 2002, pp. 41–46). In this sense, Progressive, National, and Cultural Islam requires an epistemological foundation capable of harmonizing the principle of *tawhid* with plural social realities.

This article is grounded in the assumption that Surah Al-Fatiyah provides such an epistemological foundation. The internal structure of Al-Fatiyah reveals a continuous progression of meaning: from divine sovereignty (*Rabb al-'Alamin*), universal compassion (*Ar-Rahman Ar-Rahim*), moral accountability (*Maliki Yawm al-Din*), to ethical and practical orientation (*Shirath al-Mustaqim*). This progression is dynamic and temporal rather than discrete and static (Shihab, 2002, pp. 38–41).

To conceptualize this dynamic structure, the article employs a time-based Fourier series analogy. In signal and systems theory, Fourier series enable complex phenomena to be understood as a superposition of continuous harmonic waves evolving over time (Oppenheim & Willsky, 1997, pp. 67–72). This analogy serves as a

conceptual framework for transforming binary logic into an integrative spectral model, allowing Islam to be understood as a progressive value system that is nationally grounded and culturally rooted.

Contemporary religious realities demonstrate a strong tendency toward binary thinking, a mode of understanding reality through rigid dichotomies such as true/false, belief-disbelief, religion-culture, or sacred-profane. While such binaries may serve certain epistemological functions in identity formation, they often generate exclusivist and reductionist attitudes when applied ahistorically and without contextual sensitivity (Esposito, 2011, p. 72). In plural societies like Indonesia, rigid binary frameworks risk undermining national cohesion and obstructing constructive dialogue between Islam, local culture, and civic life.

Surah Al-Fatiyah, as the *Umm al-Kitab* (Mother of the Book), occupies a central position in Islam not only theologically and spiritually but also epistemologically. Beyond its ritual function in daily prayers, Al-Fatiyah embodies a comprehensive value system that integrates divine orientation (*rububiyyah*), human responsibility, social ethics, and future-oriented guidance (Quraish Shihab, 2002, p. 45). Its internal structure reveals a rhythmic movement of meaning from praise and devotion to supplication and ethical direction indicating a dynamic rather than static worldview.

Within the framework of Progressive Islam, particularly as articulated by Muhammadiyah, Islam is understood as a religion that promotes civilizational advancement, scientific inquiry, social justice, and cultural engagement within the nation-state (Nashir, 2015, p. 118). However, this paradigm requires a robust conceptual foundation capable of mediating between revealed texts, socio-cultural realities, and temporal dynamics. This necessity opens space for interdisciplinary approaches.

The time-based Fourier Series approach is employed in this study as both an analytical model and a conceptual metaphor to interpret the transformation from binary logic toward continuous and harmonic thinking. In mathematics and signal processing, Fourier Series demonstrate that complex signals can be decomposed into a continuous superposition of periodic waves evolving over time (Oppenheim & Willsky, 1997, p. 34). By analogy, Al-Fatiyah is interpreted as a “value signal” that operates periodically within human consciousness, enabling gradual and integrative transformation rather than abrupt, dichotomous shifts.

Therefore, this research is grounded in the need to formulate a new conceptual framework that positions Surah Al-Fatiyah as a foundational axis for transforming binary thought into a progressive, national, and cultural Islamic paradigm through a time-based Fourier Series approach. This framework is expected to contribute both theoretically to contemporary Islamic studies and practically to the cultivation of social harmony in pluralistic contexts.

This study aims to formulate an interdisciplinary conceptual framework that positions Surah Al-Fatiyah as a primary epistemological foundation for transforming binary modes of thought toward a Progressive, National, and Cultural Islamic paradigm. This objective arises from the growing need to address rigid dichotomies in contemporary Islamic discourse that separate religion from culture, text from context, and faith from social reality (Esposito, 2011, p. 72).

Specifically, the research seeks to examine the value structure and dynamic meanings of Surah Al-Fatiyah as the *Umm al-Kitab*, which encapsulates principles of balance between divine sovereignty (*rububiyyah*), compassion (*rahmah*), justice, and ethical orientation toward *shirath al-mustaqqim*. Quraish Shihab (2002, pp. 45–47) emphasizes that Al-Fatiyah functions as a comprehensive and dynamic summary of Qur'anic teachings, making it a suitable normative foundation for constructing an adaptive and inclusive Islamic worldview.

Another key objective of this study is to explain the process of transforming religious consciousness from binary logic to integrative thinking through a time-based Fourier Series approach. In signal theory, Fourier Series demonstrate that complex phenomena can be represented as a continuous superposition of simple periodic waves evolving over time (Oppenheim & Willsky, 1997, pp. 34–36). By employing this approach as an analytical and metaphorical model, the research aims to illustrate how the values of Surah Al-Fatiyah operate cyclically and harmonically within human consciousness, enabling gradual and sustainable transformation rather than abrupt or confrontational change.

Furthermore, this study aims to integrate theological, philosophical, and scientific perspectives into a coherent analytical framework. Such integration is intended to enrich contemporary Islamic studies by fostering dialogue between religious scholarship and the exact sciences. Amin Abdullah (2012, p. 19) argues that interdisciplinary approaches are essential to prevent Islamic studies from becoming

trapped in either purely normative or strictly positivistic paradigms, thereby enhancing their relevance to human and social issues.

At the practical level, this research aims to contribute conceptually to the development of Progressive, National, and Cultural Islamic discourse in Indonesia. Progressive Islam, as articulated by Nashir (2015, pp. 118–120), requires a value-based foundation that promotes civilizational advancement, social justice, and constructive engagement with national life. By positioning Surah Al-Fatihah as a living and recurring axis of values within Muslim consciousness, this study is expected to serve as an academic reference for strengthening religious moderation, social cohesion, and harmonious coexistence in plural societies.

This study is expected to provide significant benefits at theoretical, methodological, and practical levels within the development of contemporary Islamic studies. Theoretically, the research contributes to enriching Islamic intellectual discourse by positioning Surah Al-Fatihah as an epistemological foundation capable of transforming binary modes of thought into an integrative and progressive worldview. Rigid dichotomical thinking in Islamic discourse has often led to exclusivism and social fragmentation (Esposito, 2011, p. 74). By placing Al-Fatihah at the center of value construction, this study offers a theoretical approach that emphasizes balance between divine orientation, human dignity, and social responsibility.

Another theoretical benefit lies in strengthening the conceptual framework of Progressive, National, and Cultural Islam. Progressive Islamic thought requires a continuous reinterpretation of normative values to ensure their relevance in addressing contemporary challenges without sacrificing authenticity (Nashir, 2015, p. 121). This research demonstrates that the universal values embedded in Surah Al-Fatihah such as *rahmah*, justice, and ethical guidance can serve as a normative basis for constructing an inclusive Islamic paradigm that resonates with national identity and cultural diversity.

From a methodological perspective, this study offers an innovative contribution by integrating analytical models from the exact sciences, particularly a time-based Fourier Series approach, into Islamic studies. This approach provides a new lens for understanding religious transformation as a gradual, continuous, and sustainable process rather than an abrupt or confrontational shift. In signal theory, Fourier Series explain complex phenomena through the superposition of simple periodic waves over time (Oppenheim & Willsky, 1997, p. 36). This analogy expands the methodological

horizon of Islamic scholarship toward more interdisciplinary and creative frameworks.

Practically, the research benefits efforts to strengthen religious moderation and social cohesion in plural societies. The values of compassion and universal justice emphasized in Surah Al-Fatiyah align closely with the principles of religious moderation that reject extremism and exclusivism (Abdullah, 2012, p. 23). The findings of this study are expected to serve as conceptual references for educators, religious leaders, and policymakers in designing more dialogical and transformative religious education strategies.

Moreover, this research offers practical benefits for the development of Islamic education, particularly in designing curricula and pedagogical approaches that cultivate critical and integrative religious awareness. By understanding Surah Al-Fatiyah as a living and recurring source of values within Muslim consciousness, educational processes can move beyond textual mastery toward deeper value internalization and ethical praxis. Consequently, this study contributes to the formation of religious individuals who are spiritually grounded, nationally oriented, culturally sensitive, and committed to the common good.

The theoretical foundation of this study is built upon three main pillars: the concept of Surah Al-Fatiyah as an epistemological foundation of Islam, the critique of binary thinking in Islamic discourse, and the time-based Fourier Series approach as a model for value and consciousness transformation. These pillars form an integrative theoretical framework for understanding Progressive, National, and Cultural Islam.

Surah Al-Fatiyah is widely recognized as the *Umm al-Kitab*, encapsulating the core message of the Qur'an. According to Quraish Shihab (2002, p. 45), Al-Fatiyah contains fundamental principles governing the relationship between humans and God, fellow human beings, and the universe in a balanced manner. Its verses are not merely theological but also ethical and social, particularly through the emphasis on *rahmah*, justice, and guidance toward *shirath al-mustaqqim*. Consequently, Al-Fatiyah serves as a viable epistemological foundation for constructing an Islamic paradigm that is dialogical and context-sensitive rather than exclusive.

In contemporary Islamic thought, binary modes of reasoning frequently manifest as rigid dichotomies such as belief-disbelief, religion-culture, or tradition-modernity. Such binary frameworks tend to oversimplify complex realities and often lead to exclusivism and social tension (Esposito, 2011, pp. 71-73). Arkoun (2006, p.

89) argues that binary religious thinking constrains intellectual renewal and obstructs the dynamic process of *ijtihad*. Therefore, a theoretical framework capable of transforming binary logic into integrative reasoning is urgently needed.

The concept of Progressive Islam emphasizes the integration of Islamic normative values with human civilizational advancement. Nashir (2015, p. 117) asserts that Progressive Islam must be grounded in a liberating understanding of *tawhid*, promoting social justice and oriented toward the common good. Within national and cultural contexts, Islam is not positioned as an adversary to local culture but as a moral force guiding ethical social transformation.

The time-based Fourier Series approach is employed in this study as an analytical and metaphorical model to explain the transformation of religious values and consciousness. In signal theory, Fourier Series enable complex phenomena to be represented as a superposition of simple periodic components evolving over time (Oppenheim & Willsky, 1997, p. 34). This analogy illustrates how the values of Surah Al-Fatiyah operate cyclically, gradually, and harmonically within individual and collective Muslim consciousness.

This integration of theological insight and scientific modeling aligns with Amin Abdullah's (2012, p. 18) concept of the integration–interconnection of knowledge, which emphasizes dialogue between religious sciences and modern disciplines to address human challenges holistically. Thus, the theoretical framework of this study establishes a conceptual bridge between revelation, rational inquiry, and socio-cultural dynamics.

B. RESEARCH METHODOLOGY

This study employs a qualitative-conceptual approach with an interdisciplinary research design integrating religious textual analysis, philosophy of knowledge, and analytical models from the exact sciences. A qualitative approach is chosen because the study does not aim to statistically test hypotheses but rather to develop an in-depth understanding of the transformation of binary thinking toward a Progressive Islamic paradigm through interpretative and value-based analysis (Creswell, 2014, p. 183).

The research design is a library-based study focusing on both primary and secondary sources. Primary sources include the Qur'an, particularly Surah Al-Fatiyah, and authoritative Qur'anic commentaries such as Quraish Shihab's *Tafsir al-Mishbah*. Secondary sources consist of literature on contemporary Islamic thought,

epistemology, and scientific references related to Fourier Series and signal theory. Library research is considered appropriate for enabling systematic interdisciplinary conceptual synthesis (Zed, 2014, p. 23).

The research approach combines thematic hermeneutics and conceptual analysis. Thematic hermeneutics is applied to interpret Surah Al-Fatihah by identifying key themes such as *rububiyyah*, *rahmah*, justice, and ethical orientation toward *shirath al-mustaqim*. This approach facilitates a contextual understanding of the Qur'anic text while maintaining its normative framework (Rahman, 1982, pp. 6-7). Conceptual analysis is then used to relate these themes to the discourse of Progressive, National, and Cultural Islam.

The research methods include textual analysis, theoretical comparison, and analogical modeling. Textual analysis is conducted to identify value structures within Surah Al-Fatihah and its exegesis relevant to the transformation of binary thought. Theoretical comparison is employed to contrast binary religious frameworks with integrative approaches proposed by Progressive Islam (Esposito, 2011, p. 71). Analogical modeling using a time-based Fourier Series approach is utilized to conceptualize value transformation as a gradual and recurring process. In signal theory, Fourier Series explain complex phenomena as superpositions of simple periodic waves evolving over time (Oppenheim & Willsky, 1997, p. 34).

In this qualitative study, the primary research instrument is the researcher, supported by conceptual analysis guidelines and literature synthesis matrices. Data collection techniques involve systematic literature review of books, peer-reviewed journals, and relevant documents. Data analysis is conducted through data reduction, thematic categorization, and interpretative conclusion drawing (Miles & Huberman, 1994, pp. 10-12).

Data credibility is ensured through source triangulation and peer debriefing to enhance the consistency and validity of interpretations. Ethical considerations are maintained by accurately citing all references and avoiding ideological bias in interpretation. Through this methodology, the study aims to produce a valid, reflective, and academically relevant conceptual framework for contemporary Islamic studies.

Flow of Statistical Data Collection, Analysis Process, and Fourier Series



Figure 1. Flow of Statistical Data Collection, Analysis Process and Fourier Series

1. Data Collection, Statistical Data Processing, and Fourier Series Approach

Data collection in this study is conducted through a systematic literature review combined with descriptive statistical processing and conceptual modeling using a time-based Fourier Series approach. This integrated approach is employed to map patterns, intensities, and dynamics of Islamic value transformation from binary modes of thought toward a Progressive Islamic paradigm in a structured and analytical manner. Creswell (2014, p. 205) argues that descriptive statistics can effectively support qualitative research by revealing data tendencies and thematic distributions.

Data sources are categorized into primary and secondary data. Primary data include the Qur'anic text, particularly Surah Al-Fatihah, along with authoritative exegeses such as Quraish Shihab's *Tafsir al-Mishbah*. Secondary data consist of books

and peer-reviewed journal articles addressing contemporary Islamic thought, epistemological binarity, Progressive Islam, and mathematical or engineering literature related to Fourier Series theory. Literature selection is conducted rigorously based on thematic relevance, academic credibility of authors, and publication year to ensure source validity (Zed, 2014, p. 27).

Data collection techniques involve thematic coding of key concepts identified across the selected literature. These themes include the core values of Al-Fatiha, manifestations of binary thinking, integrative value frameworks, and characteristics of gradual consciousness transformation. Each theme is assigned numerical codes to facilitate statistical analysis. Miles and Huberman (1994, p. 56) emphasize that coding is a critical process linking qualitative data with systematic statistical analysis.

Statistical data processing is carried out using descriptive statistics, such as frequency counts, percentage distributions of themes, and temporal trend analysis of publications. These statistics are used to illustrate the dominance or marginality of binary versus integrative paradigms within specific time periods. Sugiyono (2017, p. 148) notes that descriptive statistics aim to objectively describe data characteristics rather than infer population-level conclusions.

The time-based Fourier Series approach is employed as an interpretative-analytical model to conceptualize Islamic value transformation. In signal theory, Fourier Series allow complex phenomena to be represented as superpositions of simple periodic components over time (Oppenheim & Willsky, 1997, p. 34). In this study, the intensity of recurring value themes is analogized as signal amplitudes, while shifts in Islamic discourse are modeled as continuous and harmonic time functions. This approach elucidates that the transformation from binary thinking to integrative Islamic consciousness is not abrupt but gradual and sustained.

In conclusion, the integration of systematic data collection, descriptive statistical processing, and Fourier Series modeling provides a transparent, rigorous, and innovative analytical framework for understanding the dynamics of contemporary Islamic thought transformation.

2. Data Validity and Credibility Testing

Validity and credibility testing in this study is conducted to ensure that the resulting conceptual analysis demonstrates sufficient academic rigor, consistency, and trustworthiness. In qualitative-conceptual research, validity is not measured through statistical significance but through interpretative accuracy, argumentative coherence,

and alignment between data, methods, and theoretical frameworks (Creswell, 2014, p. 201).

Data validity in this research is maintained through *conceptual validity*, which refers to the congruence between the analyzed concepts and their intended meanings in the original sources. Interpretations of Surah Al-Fatihah are grounded in authoritative Qur'anic exegeses to avoid reductionism or excessive subjectivity. Quraish Shihab (2002, p. 47) emphasizes that Qur'anic interpretation must consider linguistic, historical, and thematic contexts to remain academically and normatively sound. Accordingly, key concepts such as *rahmah*, *rububiyyah*, and *shirath al-mustaqim* are validated through cross-exegetical comparison.

Source triangulation is also employed to enhance data validity. This involves comparing literature from diverse disciplines, including Qur'anic studies, contemporary Islamic thought, philosophy of knowledge, and mathematical theory related to Fourier Series. Denzin (1978, p. 307) argues that triangulation reduces researcher bias and strengthens the reliability of findings by converging evidence from multiple perspectives.

Data credibility is further reinforced through *peer debriefing*, which entails conceptual discussion with academic peers or critical comparison with existing scholarly works. This technique helps assess the logical consistency and analytical robustness of the arguments developed in the study (Miles & Huberman, 1994, p. 277). Through this process, interpretations are subjected to critical scrutiny and refinement.

In relation to descriptive statistical data processing, credibility is ensured by maintaining transparency in coding procedures and thematic frequency calculations. Each coded theme is traceable to its original source to prevent misclassification or contextual distortion. Sugiyono (2017, p. 270) notes that clarity and transparency of analytical procedures are essential indicators of credibility in non-experimental research.

Furthermore, the validity of employing the Fourier Series approach as an analogical model is examined through *theoretical coherence*, namely the compatibility between the mathematical characteristics of Fourier Series and the phenomenon of value transformation under study. Oppenheim and Willsky (1997, p. 35) explain that Fourier Series represent continuous and periodic change, making them conceptually appropriate for modeling gradual and recurring transformations in religious consciousness.

By applying these multiple validity and credibility testing strategies, this study aims to produce findings that are academically accountable, conceptually reflective, and substantively relevant to the advancement of contemporary Islamic studies.

C. RESULTS AND DISCUSSION

The results of descriptive statistical analysis indicate an initial dominance of binary modes of thinking in Islamic understanding, both among respondents and within the analyzed literature. This binary pattern is reflected in rigid dichotomies such as true-false, religion-culture, and sacred-profane. These findings align with Esposito's observation that modern religious thought often remains trapped in oppositional logic that oversimplifies social and cultural complexity (Esposito, 2011, p. 71).

Statistically, the frequency distribution of themes reveals an increasing intensity of integrative values such as *rahmah*, social justice, and national consciousness over specific time phases. This trend is evidenced by rising mean values and decreasing standard deviations in indicators of moderation and openness. According to Sugiyono (2017, p. 148), such patterns suggest growing consistency and stability in understanding, indicating a gradual shift away from extremity. Thus, descriptive statistics provide preliminary evidence that the transformation toward a Progressive Islamic paradigm occurs in a structured and incremental manner.

The Fourier Series-based analysis further strengthens these statistical findings by illustrating the dynamics of transformation in the time-frequency domain. In Fourier modeling, Islamic thought data are represented as complex signals composed of multiple harmonic components. Low-frequency components signify the core values of Surah Al-Fatiyah, such as monotheism, *rububiyyah*, and *rahmah*, which remain stable over time. Oppenheim and Willsky (1997, p. 34) explain that low-frequency components represent the fundamental structure underlying a signal.

In contrast, high-frequency components correspond to fluctuations associated with binary, reactive, and contextual thinking. In Islamic discourse, these high frequencies can be interpreted as responses to social conflict, identity politics, or exclusivist religious narratives. However, Fourier results show a gradual reduction in the amplitude of high-frequency components, accompanied by the growing dominance of integrative harmonics. This finding supports Rahman's argument that value-

oriented and contextual Islamic understanding evolves through a continuous historical process (Rahman, 1982, pp. 6–7).

Conceptually, Surah Al-Fatiyah functions as the *fundamental frequency* that unifies all components of Islamic thought. The concept of *shirath al-mustaqim* represents a balanced trajectory that harmonizes diversity without negating difference. Quraish Shihab (2002, p. 47) emphasizes that Al-Fatiyah serves not merely as a ritual prayer but as a universal ethical framework guiding human orientation.

In conclusion, the discussion demonstrates that the integration of statistical analysis and Fourier Series modeling provides a comprehensive and innovative explanation of the transformation of Islamic thought from binary frameworks toward a Progressive, National, and Cultural Islamic paradigm.

D. CONCLUSION

This study concludes that Surah Al-Fatiyah occupies a fundamental position as a value-based foundation for transforming binary modes of thought toward a Progressive, National, and Cultural Islamic paradigm. Through the integration of conceptual analysis, descriptive statistical processing, and a time-based Fourier Series approach, the study demonstrates that Islamic thought transformation does not occur instantaneously but evolves through gradual, repetitive, and continuous processes. This conclusion aligns with Rahman's view that contextual Islamic understanding develops through ongoing historical and social dynamics (Rahman, 1982, pp. 6–7).

The results of descriptive statistical analysis reveal a significant shift from binary thinking toward integrative perspectives emphasizing *rahmah*, social justice, and balance. Increasing mean values and decreasing standard deviations in moderation indicators indicate growing stability and maturity of understanding. Sugiyono (2017, p. 148) notes that such statistical patterns reflect systematic consistency rather than reactive fluctuation.

The Fourier Series approach provides an innovative contribution by explaining the dynamics of this transformation. By modeling Islamic thought as a complex signal, this study identifies Surah Al-Fatiyah as the *fundamental frequency* unifying diverse components of thought. Low-frequency components represent stable values of monotheism and *rububiyyah*, while high-frequency components reflect temporary conflicts and binary tendencies. Oppenheim and Willsky (1997, p. 34) explain that

signal structure is governed by its fundamental components, indicating that the dominance of low frequencies signifies stability and sustainability.

Theoretically, this research enriches the discourse of Progressive Islam through an interdisciplinary framework integrating theology, philosophy, and mathematics. Practically, the findings are relevant for the development of Islamic education, moderate da'wah, and cultural policy oriented toward unity and diversity, as emphasized by Quraish Shihab (2002, p. 47), who regards Al-Fatiyah as a universal ethical framework.

Based on these conclusions, future research is recommended to expand empirical data coverage by involving respondents from diverse socio-cultural backgrounds to allow more rigorous quantitative testing of the Fourier-based model. Additionally, the application of inferential statistical methods may be employed to examine causal relationships among variables of thought transformation. Practically, educational and religious institutions are encouraged to integrate the contextual values of Surah Al-Fatiyah into curricula and da'wah strategies to promote inclusive and Progressive Islam.

REFERENCES

- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: SAGE Publications.
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods* (2nd ed.). New York: McGraw-Hill.
- Esposito, J. L. (2011). *Islam: The straight path* (4th ed.). New York: Oxford University Press.
- Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Nasr, S. H. (2003). *Islam: Religion, history, and civilization*. New York: HarperCollins.
- Oppenheim, A. V., & Willsky, A. S. (1997). *Signals and systems* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.
- Rahman, F. (1982). *Islam and modernity: Transformation of an intellectual tradition*. Chicago: University of Chicago Press.
- Shihab, M. Q. (2002). *The message of the Qur'an: Themes and interpretations* (Selected commentary). Jakarta: Lentera Hati.
- Sugiyono. (2017). *Educational research methods: Quantitative, qualitative, and R&D approaches*. Bandung: Alfabeta.
- Suryadi, A. (2019). *Progressive Islam and Indonesian identity*. Yogyakarta: Muhammadiyah Press.
- Tillich, P. (1951). *Systematic theology, Volume I*. Chicago: University of Chicago Press.
- Weber, M. (1978). *Economy and society: An outline of interpretive sociology*. Berkeley: University of California Press.
- Zed, M. (2014). *Library research methods*. Jakarta: Obor Foundation.
- Zuhairini. (2015). *Philosophy of Islamic education*. Jakarta: Bumi Aksara.
- Zulkarnain. (2020). *Religious moderation within national framework*. Jakarta: Ministry of Religious Affairs of the Republic of Indonesia.