Symbolism in contemporary mosque architecture discourse: an integrative literature review

Doni Fireza[1,2], Azmal Sabil[3], Nangkula Utaberta[4,*]
[1]Faculty of Civil Engineering and Built Environment, Universiti Tun Hussein Onn Malaysia, Malaysia
[2]Architecture Program, School of Sustainable Planning and Design, Agung Podomoro University, Indonesia
[3]Department of Architecture, Universiti Tun Hussein Onn Malaysia, Malaysia
[4]School of Architecture and Built Environment, UCSI University, Malaysia

Abstract
Contemporary mosque architecture, as part of postmodern architecture, is an interesting focus of discussion, which has dimension of subjective meanings represented or symbolized in the architectural design. Thus, this can be viewed as a medium of communication between architects and the public, or in the context of mosque architecture, as a medium for conveying Islamic teachings to the ummah. To understand how design symbolism communicates ideas in architecture, selected publications on contemporary mosque architecture were reviewed within the postmodern architectural paradigm. This study aims to critically develop new ideas and perspectives from contemporary mosque architecture as a communication medium of religious values and teachings. Using integrative literature review as methodology, the result is the construction of new ideas and perspectives regarding the relationship among aspects in the paradigm of postmodernism developed in mosque architectural history.

INTRODUCTION

Throughout history, mosque architecture has become an interesting focus of discussion due to its various dimensions and perspectives. Two major dimensions that can be raised are the mosque as a cultural text in the context of civilization, and the mosque as a holy worship facility that contains a certain sacredness [1][2]. For the latter, the term *Bayt Allah* was coined which means House of God, implying that this facility has historically been a place to be cherished for its direct association with Divine existence.

In practice throughout history, these two dimensions often become unified in architectural works as cultural forms, in which ideas, activities, and artifacts are embodied [3][4]. However, of the three cultural forms conveyed by Koentjaraningrat, the aspect that most often becomes the starting point in mosque architecture discussion is the mosque as an artifact or object of architectural work. Departing from the mosque as an architectural object, then deductively discusses ideas, to then enter design activities carried out throughout history with various contexts. This can be seen from the discussion of mosque architecture in the publication of selected research results in the period 2015 – 2017 which is divided into three main focuses, namely construction aspects, socio-cultural aspects, and historical aspects [5]. Although divided into three main focuses, the important points of these research are on physical objects and mosque elements that are in various contexts as study cases of heritage mosques throughout the world. The result of the discussion was mosque architectural typologies related to the regional and traditional aspects proposed by literatures of

Khan, Burckhardt, Hillenbrand, and Faruqi [6, 7, 8, 9]. Those literatures then are considered classic since the subsequent research of mosque architecture mostly started from those references.

Research from the pre-postmodern era has shaped the common understanding of mosque architectural design. Heritage mosques, with their typical architectural elements, have created the perception that these features are essential in mosque design as part of Islamic culture. At the end of the modern architecture era, Islamic culture embraced the modernist spirit of design purification, returning to the authentic cultural roots of Islamic teachings originated from Arabian Peninsula [10][11]. This shift reaffirmed the conventional mosque architectural design, emphasizing domes, minarets, iwan gates, arches, geometric patterns, and arabesques. As these elements were seen as integral to Islamic culture, they became a universal design language and symbols of Islamic identity, influenced by the idea of Pan-Islamism [12, 13, 14, 15] .

In the early postmodern era, mosque design evolved into various creative approaches but remained dominated by design elements inspired by Middle Eastern art and culture, despite geographic distance. These approaches included revivalism, architectural geometric, structuralism, and architectural metaphorical methods. Additionally, regionalism and vernacularism emerged in areas outside the Middle East, adapting to local contexts and traditions [11, 16, 17, 18]. As illustrated in Figure 1, discussions during this transitional period focused on the physical aspects and design expressions of mosque elements. The meaning behind these elements was often interpreted universally, with people as the object of the architectural works expected to accept this narrative as the sole reality of Islamic tradition [12][13].

Contemporary mosque architecture, as part of the continued development of postmodern architecture does have one uniqueness of its own. As the paradigm changed, contemporary architectural works then be seen as a cultural text, which put human as a subject of the architectural discourse. This is in line with the spirit of postmodernism in architecture which emphasizes the discourse on architectural subjects rather than architectural objects [13, 19, 20], so that the diversity of architectural works of the mosque is more readable as a work of human intellectuals rather than as an object of technical engineering that has standards, laws, norms, or traditions that must be followed. In the last 40 years, there have been many mosques in various places in the world whose designs are separated from the paradigm of modernism in mosque architecture. The

mosque architecture becomes a form of cultural text that can be seen in the view of postmodern architecture as a work that has a meaningful dimension that is represented or symbolized in the design of the contemporary mosque. In the context of terms and domains of discussion in cultural studies, the term of postmodern will be equated with contemporary [4][6], so that discussing postmodern mosque architecture can be equated with discussing mosque architecture in contemporary times.

In contemporary architecture, one of the problems that underlies subsequent research used to understand architectural works is the search for formulas to discuss the meaning, purpose, and intention of the works.
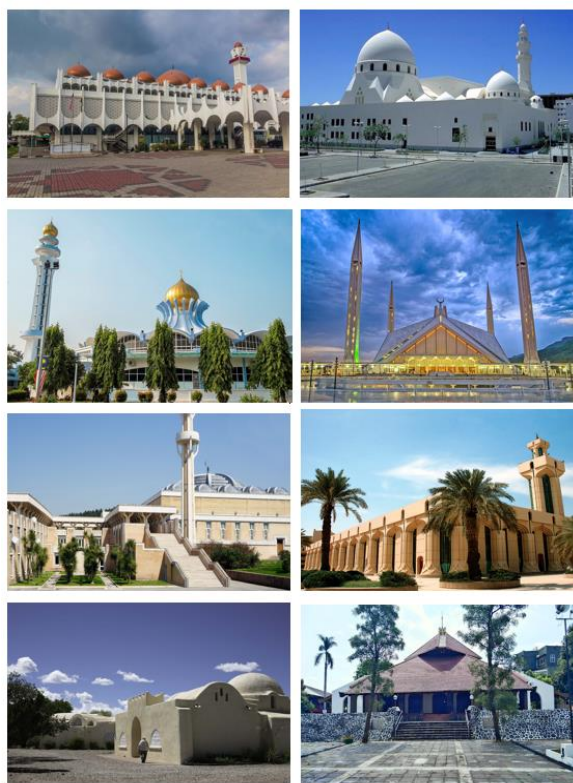
Figure 1. The design approaches of pre-postmodern mosque architecture. From left to right, above to below: Perak state mosque Ipoh (1978, modern revivalism), King Saud mosque Jeddah (1987, modern revivalism), Penang state mosque Georgetown (1977, geometric structuralism), Faisal mosque Islamabad (1986, metaphoric structuralism), Rome grand mosque (1984, structuralism), King Saud University mosque Riyadh (1985, metaphorical), Dar al Islam Islamic center Abiquiu New Mexico (1980, vernacularism), Said Naum mosque Jakarta (1977, regionalism vernacular) [21, 22, 23, 24, 25, 26, 27, 28]

Architecture can be understood as a representation of an idea or concept raised by the architect or the owner of the building in a certain context [29, 30, 31].

The process of representation is then embodied in the process of symbolism that accompanies the design process, by translating ideas through design language and vocabulary. Architectural works in contemporary times can then be understood as a language that has a certain meaning to be conveyed to the public [32, 33, 13, 34, 35]. This is what is meant by humans being the subject of the architectural process, as a value filled by postmodern architecture in the modern paradigm. Thus, architecture can be viewed as a medium of communication between architects or building owners - in the context of cultural studies called author, with the public/reader. The content of message to be conveyed can be anything, with any language mode. In the context of mosque architecture, it is known that conventional mosque architecture uses ubiquitous historic elements whose universal meanings represent the Divine existence of Allah regardless of the cultural context of it. Domes and minarets, for example, represent heaven and the unity of Allah as well as *tawheed* doctrine. The geometric pattern symbolizes the infinite attribute of Allah and calligraphy shows the sacred texts of Allah as it represents the sacredness of space [6, 7, 8]. This comprehension led to universal spiritual values that Muslim throughout the world were hoped to grasp. On the other side, contemporary mosque architectural design can also be viewed as a medium for conveying Islamic values and teachings to the congregation or ummah, especially the locals, where they will interpret it as a means of improving their spirituality to achieve certain traditional ideals of life. So, the design of a contemporary mosque can also be seen as the role of religious symbols' existence in the certain community, which is bound to the locality [36, 37, 38, 39, 40, 41].

To understand how design symbolism communicates ideas in architecture, selected publications on contemporary mosque architecture were reviewed within the postmodern architectural paradigm. The study aims to critically develop new ideas and perspectives, viewing contemporary mosque architecture as a symbolic medium for conveying religious values and teachings. The construction of new ideas and perspectives is the answer to the question regarding the relationship among aspects in the paradigm of postmodernism developed in the history of mosque architecture as object-oriented architecture, even dominated by design vocabulary from some cultures. The development of the theoretical framework of this topic is important for identifying gaps within the concentration of discussion that the researchers have done, in other words, for seeing aspects that still have not received attention for further study.

METHOD

The method used is integrative literature review which is one of the literature review methods. Review literature is generally useful for building new conceptual models or theories of a particular theme, as part of mapping research development on that theme [42]. The integrative literature review is used to specifically discuss a particular topic of a phenomenon that exists on the research theme. This method is carried out to analyze, criticize, and synthesize research papers on topics that have been developed and saturated in the field of science. The integrative literature review is quite useful in rediscovering or changing the perspective of research on the topic that may have been neglected due to the intervention of existing research and is useful for reconceptualizing a topic and finding ideas for subsequent research [22][23].

The integrative literature review is also used to make an overview of the knowledge base, to review critically, to reconceptualize potentially, and to develop theoretical foundations of specific topics in its development. This literature review carried out will also emphasize the formation of initial or preliminary conceptualizations and theoretical models. Therefore, the selection of literature to be reviewed will not cover all aspects of articles that have been published, but rather combine perspectives and views from other fields or different research traditions [42]. The analysis carried out, although there is no specific standard for how the technique works, in general is to review the literature's main ideas and relationships that exist in the topic of discussion. Advances in knowledge and theoretical frameworks are the target of integrative literature review, so they must produce new conceptual or theoretical frameworks [42].

This literature review consists of 5 stages: (1) problem formulation; (2) data collection or literature search; (3) evaluation of data; (4) data analysis; and (5) interpretation and presentation of the results [45], which is shown in Figure 2, including their affecting variables.
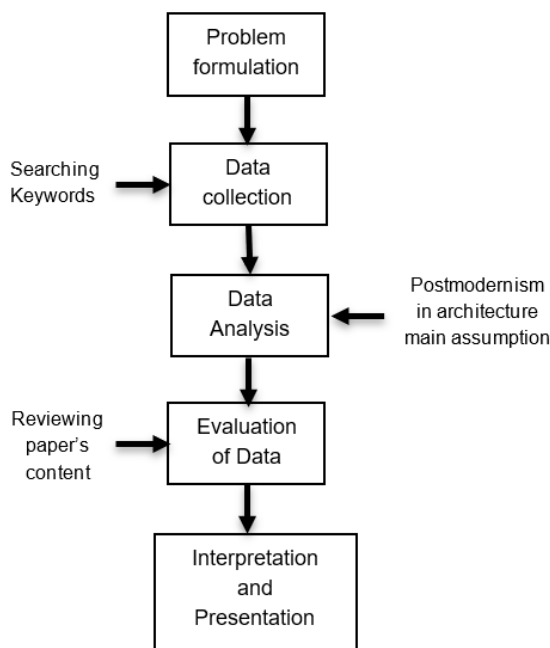
Figure 2. The stage of integrative literature review used in this review paper

After the problem and objectives are formulated, it continues to the next stage, by collecting papers that have been selected using certain keywords which are derivative discussions of contemporary mosque architecture and design symbolism. These keywords are: "Modern Mosque architecture", "Contemporary Mosque architecture", "Symbolism", "Symbolic design", "Identity", "Semiotic architecture", "Communication" and "Religious symbols". The selection was collected from the scientific journal Scopus database and Garuda database (an Indonesian comprehensive database for scientific publications).

Analysis

The analysis of these papers is done by systemically reviewing the content of each research paper. The structure of the content of the paper consists of points such as: purpose and aims, main topics, results and findings, and main discussion topic. Those points are reviewed to search for what topics related to postmodernism in architecture that is being studied in the papers. The relationship among those points is concluded in the point of what field each paper's discussion contributes to.

The review of the contents of each paper is shown in Table 1.

Table 1. The review of papers that discussed symbolism in contemporary mosque architecture.

No	Authors, year published	Purposes and aims	Main topics	Result and Findings	Main Discussion Topic	Contribution to Fields of Study
1.	Abu A'mar, 2017	To explain the role of symbolism in the religious context of Sufism and Sunnism, which derived in architectural design as the interpretation of the Quran & Hadith	Religious symbolism in Islamic arts	The similarity of mode of thinking and design concept between Sunnism and Sufism artists, as a state of ultimate faith and sensitivity, and the result of deep contemplation.	The philosophical background of the symbolic design concept, including the interpretation of Quranic verses in the Islamic tradition.	Religious and spiritual studies Architectural design Arts Studies
2.	Destiarmand and Santosa, 2013	Finding facts and describing and explaining the correlation between	Impact of Islamic authentication towards traditional	The domination of ornaments in great mosques in West Java is held by universal and	The Islamic authentication brought by the purification movement was	Cultural studies Art and architecture history and theory.

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		mosque design ornament and the issue of Islamic reform and purification	ornaments in Great Mosques in West Java	geometrical ornaments, which do not come from local tradition.	resulting the understanding that the Islamic as ornaments should come from the Arab Peninsula and Middle Eastern culture	
3.	Elrayies, 2018	To investigate the judgments and the reason of its revival of ornamentation in contemporary architecture	Analyzing the ornaments in contemporary architecture	The three main roles of ornamentation, as functional aspect, symbolic aspect, and aesthetic aspect, that will be interpreted and encoded into some design expression	The historical aspect of ornamentation usage through times, and how that aspect forms the design of it now along with its meaning and design.	Art and architecture history and theory Cultural studies Philosophy
4.	Abd Rashid and Ahmad, 2008	To discuss physical and spiritual aspect of minbar in mosque architecture in Malay world	Form and symbolism in Minbar design in Malay world	There are structural similarities between the minbar who are in both sacred mosque in the world with the one in traditional mosque in Malay world.	The variety interpretation of the form of the minbar design, seen as the cultural product of Malay world.	History of architecture Cultural studies and anthropology
5.	Mohd Sojak and Utaberta, 2013	To discuss the history, concept, philosophy, and development of the adaptation of Islamic thought to the ornament in the Malay traditional	Typological study and comparison of ornaments between modern and traditional mosque in Malaysia	The use of traditional motif or architecture to modern mosque, the shifting of symbolism used in mosque design in Malaysia, and the crises in Malaysian architecture.	The designed object of the ornamentation and decoration with its meaning that came from the local culture and from foreign arts that considered as a universal symbol of Islamic world.	History and theory of mosque architecture Cultural studies
6.	Ghasemzadeh, Fathebaghalli, and Tarvirdinassab, 2013	To examine various types of Islamic architecture and conduct a semiotic analysis of these works	Sign and symbols in Islamic architecture	The usage of sign and symbols in Islamic architecture that communicates religious values and secular aspect of life. Spread to the world known as Islamic symbols.	How the sign and symbols in architecture as an artifact of human culture developed in history and become a significance of its application.	History and theory of architecture, Art studies Semiotics in architecture.
7.	Shafiq, 2014	To contextualize the concept and analyze the Islamic traditional ornamentation, focusing on the principles of Islamic ideology.	New vision of Contemporary Islamic art based on Islamic ornamentation studies	Local tradition, technology, design trend, economy, social strata, and artisan taste as variable that may affect the evolve of expression of Islamic ornamentation and elements.	The symbolism, that plays in a one specific cultural realm, must follow the development of the era and the local where the symbols created. It also may represent the values come from the local.	History of Islamic art and architecture Postmodern architecture
8.	Utaberta, Handryant, and Mydin, 2015	To provide the Charles Jencks's approaches to evaluate ornamentation system in Malaysian mosque	Analyzing the ornamentation in with the perspective of Jencks' theory	The ornamentation will be seen as a text of communication, not merely serve as a decorative function but also speak a specific meaning or represent something bigger	The ornamentation in contemporary mosque in Malaysia is not much speaking about the context of this nation. Instead, speaking the revivalism of	Cultural studies Postmodern architecture and culture.

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					Savafid period that been adopted as the style of the country.	
9.	Ahani, Etessam, and Islami, 2017	To distinguish between 'ornament' and 'decoration' of the scholars' accounts and application to architectural text	The distinction of ornament and decoration in architecture	The definition of each term, the criteria to define which of which derived from the study of lexicon and architectural text.	The distinction of role in one architectural element other than the structural and primary expression.	Theory of architecture, Communication studies
10.	Fina, 2018	To re-examines the claim of unity and universality of Islamic art and architecture in the Southeast Asian context.	Questioning the universality of Islamic art, with SE Asia Islamic art and architecture as case study	Islamic art and architecture in Malay world that dominated with the Javanese culture is considered as the part of Islamic world, but genuinely is Javanese uniqueness.	Arguing the placement and the claim that Islamic art & arch in SE Asia originating from the Javanese art not considered as part of the Islamic world	History of architecture History of art Cultural studies
11.	Jamaludin and Salura, 2018	To understand the symbolical meaning of triangle shape used in mosque architecture in Indonesia.	Understanding the meaning of triangular shape in mosque design	The A-shape or the triangular form is most used as a roof form. Semantically, in Nusantara culture, this also has meaning of mountain, or if it is rotated as a womb.	The A-shape and triangular shape are common forms which have several meanings in Nusantara culture. It is not related whatsoever with the church form.	History and theory of architecture Aesthetic theory Cultural anthropology
12.	Ismail and Mohd Rasdi, 2010	To show how the political intentions of a country's leader have a strong effect on the shape of architecture.	Mosque architecture and political agenda in 20th century Malaysia	Each leader trying to implement the spirit of age and the technological development by using their own interpretation about values	The efforts of these leaders who override the Islamic issues to gain supports and legitimization thru material progress in nation building form.	History of architecture, Socio-political science
13.	R. Othman and Zainal-Abidin, 2011	To indicate the importance of studying the ornamenting the mosque	The importance of Islamic art in mosque interior	Ornamentation of Islamic Art in mosque interior should be aligned with the Sharia law, to get more closer to Allah, and to understand Islamic teaching more easily	The perspective of getting closer to Allah to seek His beauty thru Islamic art is important. Paradox to the secular building that the beautification and glamour design is part of the building utilitarianism.	Theory of architecture, Philosophy of art & design
14.	Wismantara, 2012	To explore the comparative, the concept of architectural homogeneity and hybridity in mosque design, using a critical theory approach	The dynamics of Nusantara Mosque form: architectural homogeneityand architectural hybridity.	There are two modes of mosque design: homogeneity and hybridity. To contemporary architecture, the hybridity may play the important role to shape the development	For the present time, it is important to more put attention to the hybridity modes, since it is more suitable to the postmodern paradigm	Theory of architecture, Philosophical thinking of design
15.	Wirakusumah, Antariksa, and Salura, 2021	To reveal the dynamics of meaning in mosque architecture	Needs and wants in mosque architecture, with traditional	This study provides a new reading method to show the meaning of mosque architecture to	Three stages in doing comparing analysis between ideograms - typograms, first:	Theory of architecture, Hermeneutics in architecture

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		using the comparison between ideograms and typograms determined through the Function-Form-Meaning.	and modern mosque in West Java as case studies	identify their dynamic range of meanings	from the observation and literature, from the triangulation data source, and the third from two mosque study cases	
16.	Hoteit, 2015	To shed light on the various trends in mosque architecture and evaluate their conformity with standards and principles	The impact of contemporary architectural trends on the symbolic and spiritual function of mosques	Mosque architecture has developed and changed with changes in civilizations and cultures, such as for political and social reasons rather than religious one.	The importance of preserving the traditional elements of mosque design while incorporating contemporary architectural trends	History and theory of architecture, Political and cultural studies Philosophy
17.	El-Torky, 2018	To examine how the political ideology of the ruling regimes in Egypt influenced architecture and shaped the built environment	Political symbolism in architecture of Mosque of Mohammad Ali in Egypt.	The mosque tells the story, symbolized the ruling regime, draw the mental image of his ruling regime, through its expression on mosque architectural elements	It explores the political symbolism, authority, power, and identity expressed through the mosque architectural design and planning, as the connotative function of architectural elements	Semiotics in architectural design, Political and cultural studies
18.	Utaberta et al., 2015a	To analyse the Prophetic Hadith as an alternative design approach for modern mosques in Malaysia	The evaluation and analysis of Prophetic Hadith for the design of modern mosques in Malaysia	Mosque is not merely the facility of spiritual devotion, but also the house of activity in the development of community. This good practice shown by Muhammad pbuh become inspiration to today's mosque design.	The evaluation and analysis of Prophetic Hadith that to some extent mentioned some architectural elements incorporated in the design of contemporary mosques in Malaysia	Islamic/mosque architecture, Religious studies Philosophy
19.	Mohamad Rasdi and Utaberta, 2010	To examine mosque design and architecture, particularly in relation to the principles of sustainability, social function, and the use of natural materials.	The application of Frank Lloyd Wright's principles of organic architecture to mosque design	Suggest that simplistic revivalism in mosque design can be seen as regressive and uncreative. Designers should question traditional approaches and consider present socio-economic and regionalist concerns	The need for mosque designers to veer away from historicism and instead seek inspiration from the teachings of the Prophet Muhammad and the principles of modern architecture	Islamic/mosque architecture theory Postmodern architecture Philosophy
20.	Rosniza Othman, 2011	To explore the importance of motifs and ornamentation in mosque architecture, specifically focusing on the interior design.	Importance of motif and ornamentation in mosque interior	Highlight the lack of comprehensive research on ornamentation in Islamic art. It emphasizes the significance of motifs and ornamentation in creating a visually appealing and spiritually fulfilling experience.	The argumentation that interior design of mosques should create a welcoming and spiritually uplifting environment, by beautifying the interior ambience to meet the basic aesthetic of individuals.	Interior design, Islamic art Psychology

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21.	Surat et al., 2011	To discuss the relevance of domes as a main element in Islamic architecture.	The misconception and misinterpretation of the significance of domes in mosque architecture	The use of domes as a main architectural element in mosques is not historically accurate or culturally significant. There also a political and historical bias related to this element	Revolves around the personal political agenda and the use of foreign architectural revival to unite the Islamic community	Architectural history and theory Political and cultural studies
22.	Ardhiati, 2013	To explore the architectural designs of two monumental mosques, the Al-Irsyad Mosque, and the Master Plan of Mecca City	The expression of modernity in Islamic architecture.	Reveal an architect's paradigm shift of modernity in mosque architecture, from glamorous and fashionable designs to simplicity and quietness	The concept of "architecture stage" as a non-material architecture that carries the imprint of the architect's dreams and ideologies.	Mosque architectural theory, Philosophy of religious building
23.	Kassim, Abdullah, and Mohd Taib, 2012	This study will try to examine the application of decorative pattern in the interior of mosque	A review of current literature about the decoration of mosque interior	Ornamentation and decoration function in mosque: to help accentuate the feeling of Tawhid, for aesthetic value, structural functions and to transform the space.	The function of ornamentation and decorative pattern in interior mosque as well the advantages and disadvantages of using it	History & theory of Islamic architecture, Fine arts studies
24.	Kassim, Abdullah, and Taib, 2014	This study will try to examine the application of decorative pattern in the praying hall of a mosque	A review of current literature about the decoration of mosque praying hall	The function of ornamentation and decoration in praying hall: to help accentuate the feeling of Tawhid, for aesthetic value, structural functions and to transform the space.	The function of ornamentation and decorative pattern in praying hall as well the advantages and disadvantages of using it	History & theory of Islamic architecture Fine arts studies
25.	Farazmand and Sarbangholi, 2014	To explore the patterns of Islamic architecture in mosques of the third millennium	Investigating of patterns of Islamic architecture in 3rd millennium mosques	Those minarets and domes are the main architectural elements, while geometric decorations, holy book verses, and brickwork are the most used decorations.	Revolves around the importance of preserving traditional architectural elements while adapting to modern materials and techniques.	Islamic /mosque architectural design theory Art and aesthetics theory
26.	Marhalim et al., 2015	To analyze the preference for dome building in Malaysian contemporary mosques	Dome as an architectural element in Malaysian mosques.	Reveal that in Malaysia, the dome is primarily used for decorative purposes rather than functional ones.	Revolves around the need for a balance between aesthetic and functional aspects of dome architecture in Malaysian mosques	Islamic architecture and Cultural & anthropology
27.	Yan et al., 2015	To analyze and synthesize the elements of traditional mosques in Malaysia as elements in future modern mosques.	The relationship between traditional mosque design and contemporary practices in Malaysia	The need to move away from Middle Eastern architecture and instead embrace the multicultural and historical background of Malaysia, also a response to nature	Revolves around the need to preserve and incorporate traditional architectural elements in modern mosque design to maintain locality values.	Vernacular architectural theory Sustainability design

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				and reflects Islamic values.		
28.	Dewiyanti and Budi, 2015	To explore the design and functionality of the Salman Mosque located in ITB campus in Indonesia.	The implementation of modern architectural concepts in the mosque's design.	Show that the Salman Mosque successfully attracts the interest campus community, serving as a place of worship and a hub for various campus activities.	Revolves around the implementation of modern architectural concepts in the design of the Salman Mosque	History and theory of architecture, Philosophy of the architect
29.	Utaberta et al., 2015b	To examine the issue of identity of mosque designs in Malaysia	Issues and problems of modern mosque designs in Malaysia,	Identifies multiple layers of problems and issues, emphasizing the importance of critical discourse, different perspectives, and understandings to provide holistic solutions.	Revolves around the issues of identity, design and planning, practicalities, and management of mosques in Malaysia	Postmodern architecture Cultural studies.
30.	Batuman, 2016	To examine the politics of mosque architecture in Turkey and its role in shaping national identity with reference to Islam	Negotiating Islam and Nation in Turkey, using the mosque building and architecture	The imitation of classical Ottoman Mosque architecture, with recent utilization is different and serves as a tool for rebuilding national identity with Islamic references	Revolves around the metonymic use of the nation and civilization, the reference to Ottoman rule, and the political ambitions of Prime Minister Erdogan	Architectural history Cultural studies, Political and religious studies
31.	Zekrgoo, 2017	To examine the rise of eclecticism in 21st century Malaysian mosque architecture	The rise of eclecticism in 21st century Malaysian mosque architecture	Showed a conscious departure from traditional styles towards a fusion of different cultural influences, aesthetic values, and political history, to the transformation of Malaysian mosque design.	Centered around the impact of those trends on the social behavior of Muslims during worship.	History and theory architecture Postmodern design philosophy
32.	Holik and Aryanti, 2017	To examine the architecture of the Salman Mosque and its departure from conventional mosque designs	Ar. Noe'man's critic to Indonesia conventional mosque architecture thru Salman Mosque	The Salman Mosque's architecture deviated from the conventional traditional Indonesian mosque style, with its modernism philosophy	Centered around the architectural elements used in the Salman Mosque and how they reflected the architect's understanding of modernism incorporated in modern Islam	Theory of architecture Design philosophy
33.	Putrie, Martokusumo, and Budi, 2017	To examine the balance between continuity and change, as well as tradition and innovation, in NU's contemporary mosque, East Java	Revisiting the legacy of Wali Sanga in NU's contemporary mosque in Malang East Java	Showed that the contemporary mosques of the Nahdliyin exhibited both continuity and change, while there were maintained to uphold religious traditions and identity	Revolved around the relationship between mosque architecture, ideological reasons, and the socio-political dynamics of Islamic groups, as a reaction to modernist values	History of architecture Cultural studies Philosophy
34.	Özaloglu, 2017	To analyze the architectural	Issue of contemporary	The importance of external factors	Revolves around the tension	Architectural design theory

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		elements of the mosque and their denotative and connotative functions.	mosque architecture in Turkey, case study AHA Mosque in Ankara.	other than design intention in the evaluation of mosque projects	between architectural innovation, influences, and traditional practices in mosque architecture.	Philosophy of design
35.	Gür, 2017	To explore how the mosque challenges traditional mosque architecture and creates a unique spiritual experience	The displacement of familiar architectural forms on experiential qualities of religious space at Sancaklar Mosque	The Sancaklar Mosque successfully displaces familiar architectural forms and creates a spiritual experience through architectural elements	Revolves around the concept of defamiliarization and the critical engagement with the past in mosque architecture	Architectural design theory Philosophy Psychology of reader/visitor
36.	Putrie, Martokusumo, and Budi, 2018	To examine the socio-political dynamics of community mosques in Malang, East Java, Indonesia	Identity of community through the socio-political dynamics' aspect in mosques in Malang	Reveal distinctions in both physical and non-physical aspects, highlight the different perspectives and decision-making processes	Revolves around how identity representation and negotiation in community influence the design and modification of architectural elements	Islamic architecture Political and cultural studies
37.	Bousmaha, Chergui, and Zouaoui, 2019	To evaluate the architectural elements of the mosque and understand their denotative and connotative functions.	The aesthetic value of the Islamic University Mosque in Constantine	Reveal that the mosque's architectural elements successfully convey a sense of spirituality, cultural identity, and Islamic aesthetics.	Revolves around the significance of architectural elements in creating a meaningful and aesthetically pleasing religious space	Islamic architecture Aesthetic theory Psychology of space
38.	Fawaid, Zamroni, and Baharun, 2019	To explore the political contestation surrounding sacred mosques in Java and the response to the global architecture of Middle Eastern Islam	Contesting sacred architecture: politics of nation state in battle of mosques in Java	The architecture of sacred mosques in Java has been a site of battles between modern Islamic and traditional Javanese worldviews	Revolves around the politics, culture, and the contestation over modern and traditional architectural styles	Architecture history and theory, Cultural and political studies
39.	Fatih, Herlily, and Kurniawan, 2019	The purpose and significance of architectural elements, specifically minarets, in contemporary mosques	Contemporary meaning and function of Minaret. Case study Grand Mosque Hasyim Asyhari	The existence of minarets is more influenced by the creativity and decisions of architects rather than functional needs	The existence of minaret in contemporary mosque to its relation to functionality and design elements.	Architectural design theory, Semiotics in architecture
40.	Allahham, 2019	To examine the metamorphosis of mosque semiotics in contemporary mosque architecture to people's perception	Metamorphosis of mosque semiotics, case study the state mosques	The metamorphosis in mosque architecture due to the changes brought about by modernity and have led to a redefinition of its concept in societal collective memory.	Revolves around the need to revive the sacred-secular relationship in mosque architecture and to establish a new metamorphosis in the role, function,	Mosque architecture theory Semiotics Psychology of community

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					and meaning of the mosque.	
41.	Nadyrova and Nadyrova, 2020	To examine the identity and architectural elements of contemporary mosques in different regions in Tatarstan Republic in Russia	Identity of mosque architecture in Russia in the last 50 years	Mosque architecture plays a significant role in expressing cultural and religious identity, and that the design mosques should be in harmony with the cultural and social characteristics of the region.	Revolves around the importance of architectural identity, the influence of historical and cultural factors, and the need for sustainable development in mosque architecture	History of architecture Cultural and anthropology
42.	Ullah, Sheikh, and Morris, 2020	To explore the contemporary architectural trends and their impact on the symbolic and spiritual function of mosques	The mosque architecture, the history of design, typology, and regional	Mosque architecture reflects the social, spiritual, and aesthetic aspirations of the Muslim community throughout of history	Revolved around the creative process of architectural design and the need for human involvement in decision-making	History of architecture, Philosophy Cultural studies
43.	Kamarudin, Baydoun, and Mahidin, 2020	To understand the visual qualities of calligraphy scripts and their placement within mosque architecture.	Profiling Islamic calligraphy scripts for decoration of mosque in Peninsular Malaysia	The presence of Islamic calligraphy in mosques has a profound impact on the physical and spiritual well-being of the users, fostering a deeper connection with the divine.	The study highlights the importance of calligraphy as Islamic heritage, contributing to its sustainability and preservation for future generations	Islamic architecture, Mosque architecture History of art
44.	Hareri and Alama, 2020	To compare the lighting design in two mosque typologies, the historic Al-Shafi'i Mosque and the contemporary Al-Farsi Mosque in Jeddah, Saudi Arabia	Lighting design analysis in two mosque typologies in Jeddah	The orientation of the mosques significantly influenced the distribution of natural light and the overall lighting quality. Attention to be given to lighting qualities to enhance the spatial experience	Revolved around the significance of light in mosques, the integration of daylighting and artificial lighting, and the importance of balancing natural and artificial light sources.	Architectural design theory Lighting design Psychology of visitors
45.	Galimzhanova et al., 2020	To explore the principle of ijtihad in the context of globalization and its impact to Kazakhstani mosque design.	Ijtihad principles in searching Identity in the modern architecture of Kazakhstani mosque.	Kazakh architects and artists utilize various approaches, to create a modern artistic image while maintaining Muslim identity.	Revolves around the principles and trends shaping Kazakhstani mosque architecture in the face of globalization.	Postmodern architecture theory Philosophy Hermeneutics in architecture
46.	Ismail and Siraj, 2021	To identify the architectural elements that contribute to modern regionalism characteristics in mosque design	Modern regionalism in the design of djami' mosques, to promote sustainable community development.	One of the key contributions of the modern regionalism approach in mosque design is its ability to empower and involve people in their communities.	Emphasizes the importance of incorporating the principles of modern regionalism to promote sustainable community development.	Theory of architecture Regionalism Sustainable design
47.	Awad, 2021	To examine mosque architecture in	The current trends in mosque	Revealed that most mosques in the UAE follow traditional and	Revolved around the influence of donors and users	History and theory of architecture,

No	Authors, year published	Purposes and aims	Main topics	Result and Findings	Main Discussion Topic	Contribution to Fields of Study
		the northern cities of the United Arab Emirates (UAE) and classify them based on their key elements and features.	architecture in northern cities of the UAE	historic designs, with a strong attachment to local styles.	in determining the style of the mosque, the challenge of maintaining the mosque's identity while reflecting the present time.	Postmodernism in mosque architecture
48.	Gurjia and Dhannoon, 2021	To analyze the use of repetitive elements in mosque design across different periods in history	Repetitive elements and their objectives in ancient and contemporary mosques	The clear difference in the total number of repeated elements between ancient and contemporary mosques, and its indication to trend shifting.	Revolves around the significance of repetition in mosque architecture and its evolving nature over time	Architectural design history and theory, Aesthetic theory
49.	Nugraha and Ashadi, 2020	To explore the application of semiotic architecture in mosques on the Al-Irsyad Satya Mosque in Bandung	Semiotics architecture application on mosque Al Irsyad Satya	Al-Irsyad Satya Mosque applies the concept of semiotic architecture through various signs and symbols	Revolves around the classification and analysis of these signs and their denotative and connotative functions	Semiotics architecture Mosque architecture theory
50.	Suryandari and Azra, 2021	To examine the development of mosque architecture and its connection to the intellectual development of Muslims.	Dome less mosque and its relevance to Muslim intellectual's development	The architecture of a dome less mosque reflects the intellectual development of Muslims over time. It represents a return to the simplicity and purity of Islamic teachings	Revolves around the historical development of mosque design, the influence of Muslim intellectuals on design changes, and the incorporation of local culture and traditions in design	Islamic/mosque architecture – Intellectuality history
51.	Alajmi and Al-Haroun, 2022	To analyze the design of contemporary minarets in Kuwaiti mosques and understand the various approaches used in mosque design	Various aspects of minarets in contemporary Kuwaiti mosques	The minaret continues to hold an important position in contemporary mosque architecture in Kuwait.	The approaches of architectural design of contemporary minarets in Kuwaiti mosques	Theory of mosque architecture, The history of art
52.	Yusuf and Putrie, 2022	To examine the linguistic landscape of mosques in Indonesia, specifically in the city of Malang, to understand the representation of identity and sociopolitical dynamics within these religious sites	The linguistic landscape of mosques in Indonesia	The significance of materiality and language in reflecting the efforts of different subculture groups to assert their identity.	The study delves into the identity representation of NU and Muhammadiyah mosques.	Theory of contemporary mosque architecture, Socio- political communication theory
53.	Nirmala, Violaningtyas, and Damayanti, 2019	To explore the use of dome as Islamic architectural	The signification of Islamic ornament in	The Dian Al Mahri Kubah Emas Mosque successfully incorporates Islamic	Revolves around the importance of maintaining the distinct identity of	Art & design theory Mosque architecture

No	Authors, year published	Purposes and aims	Main topics	Result and Findings	Main Discussion Topic	Contribution to Fields of Study
		ornamentation in Dian Al Mahri Kubah Emas Mosque Depok Indonesia	Dian Al Mahri Kubah Emas Mosque	ornamentation to create a culturally significant and visually appealing space.	mosques, avoiding resemblance to other religious buildings, and reflecting the symbols and teachings of Islam.	Cultural studies
54.	Gunardi et al., 2021	To analyze the symbolic signs identified in the visual texts of the architectural design of Masjid Al-Mishbah	The application of semiotics in analyzing the architectural design expression of Al Misbah mosque.	Deeper understanding of the philosophical ideas behind the mosque architectural design, leading to transformative and culturally resonant contemporary architecture	Revolves around the analysis of the identified symbolic signs, including icons, indices, and symbols, and their meanings in the context of the mosque.	Semiotics in architecture Cultural studies
55.	Wekke, 2013	To explore the relationship between architecture and identity in mosques in West Papua, Indonesia.	The review of expression on mosque architecture of Muslim minority in West Papua	The mosques and its architecture became the cultural phenomena that embody the community's beliefs and values.	Emphasizes the significance of architecture in expressing and communicating identity thru the mosques as cultural and social institutions	Socio-cultural studies Anthropology Postmodernism in mosque architecture
56.	Apriyanti, 2022	To clarify the misperceptions and accusation surrounding the architectural design of Masjid Al Safar Cipularang	The argumentation communication of Ridwan Kamil, the designer of the mosque, in response to the accusations	Ridwan Kamil effectively utilized argumentation techniques to present his case and counter the accusations	Revolved around the strong and well-structured argumentation presented by Ridwan Kamil, based on his philosophical thinking and architectural theory	Communication studies Architectural design theory Philosophy
57.	Adiputra and Salura, 2021	To analyze the signs and markers of sacred orientation in mosque architecture	Sign and symbolic markers of sacred orientation in mosque architecture	The mosques utilized various architectural elements to guide worshippers towards the qibla direction.	Revolved around the role of these elements in creating a sacred and oriented space for prayer.	Semiotics in architecture in Religious studies
58.	Nazhar, 2016	To investigate the relationship between architectural elements and their denotative and connotative functions.	Study of meaning with Al Irsyad mosque's mihrab as case study	Architectural elements can communicate meaning and evoke emotions in individuals. cultural, social, and personal factors.	Revolves around the religious philosophical basis to create the symbolic design expression in mosque elements, which contain several Islamic meanings.	Semiotics in architecture Design philosophy Cultural studies
59.	Wazir and Kamil, 2022	To explore how mosques can be used as tools for political purposes, whether consciously or unconsciously	The semiotic analysis of mosque architecture and its connection to power and politics	The correlation between mosque size and population, the architectural characteristics in ethnically dominant areas, and political competition in mosque names	Revolves around the role of mosque architecture as a manifestation of power and politics, and how it can be used to assert symbolic dominance	Semiotics in architecture Political communication studies Cultural studies

RESULTS AND DISCUSSION
Categorization of the papers

From the table above, discussing contemporary mosque architecture within the theme of symbolism expressed in architectural design may involve interdisciplinary topics. Ranging from topics that evolve around the design appearance of the object to topics that are more radically related to the epistemology of the stakeholders of the mosque. Many of the papers above discuss not just relation between two topics, but also among topics. This shows the complexity of discussion in postmodern architecture, with some of that may involve contradiction among the role of design architecture in one culture or context.

The main discussion of those papers above mostly emphasizes the human intellectual process or the human involvement in mosque existence as a subject rather than discussing the designed architectural elements as the object of existence. Therefore, the contribution to the realm of postmodernism in architecture from the main topics discussed in those papers can be categorized into several fields of study.

The categorization is shown in Table 2.

Table 2. The categorization of fields of study is based on the paper's discussion.

No.	Reference papers	Field of discussion
1.	Adiputra and Salura, 2021; Allahham, 2019; El-Torky, 2018; Fatih, Herlily, and Kurniawan, 2019; Ghasemzadeh, Fathebaghalli, and Tarvirdinassab, 2013; Gunardi et al., 2021; Nazhar, 2016; Nirmala, Violaningtyas, and Damayanti, 2019; Nugraha and Ashadi, 2020; Wazir and Kamil, 2022	**Semiotics.** Discussing the sign systems expressed in architectural design elements. This includes the mental concept of stake holders, its design expression, and its meaning within one culture. It is also being called semiotic architecture (Jencks, Eco, Broadbent). Most of the discussion is related to the pragmatic aspect rather than the semantic aspect in semiotics.
2.	Allahham, 2019; Batuman, 2016; El-Torky, 2018; Ismail and Siraj, 2021; Özaloglu, 2017; Putrie, Martokusumo, and Bud,i 2017, 2018; Surat et al., 2011; Utaberta et al., 2015b; Wazir and Kamil, 2022; Yusuf and Putrie, 2022	**Politic.** Discussing about the role of the modern/contemporary mosque in political issue Its domain ranging from the political or national identity, the regional or ethnicity issues that create a political aspiration that need to be expressed with mosque design, government regulation in designing and building a mosque, and how the certain symbolic design used as a framework of gather sympathy from ummah.
3.	Ahani, Etessam, and Islami, 2017; Apriyanti, 2022; Ardhiati, 2013; Fatih, Herlily, and Kurniawan, 2019; Mohd Sojak and Utaberta, 2013; Putrie, Martokusumo, and Budi, 2018; Utaberta, Handryant, and Mydin, 2015; Wazir and Kamil, 2022; Wekke, 2013; Yusuf and Putrie, 2022	**Communication.** Discussing the role of architecture as a medium of communication of certain ideas or values, using architectural design as language. The communication style can be various, expressed in architectural vocabularies. Discussion on this topic is seeing a mosque architecture as cultural text, that contains certain meaning.
4.	Abd Rashid & Ahmad, 2008; Abu A'mar, 2017; Alajmi & Al-Haroun, 2022; Awad, 2021; Bousmaha et al., 2019; Destiarmand & Santosa, 2013; Elrayies, 2018; Farazmand & Sarbangholi, 2014; Fina, 2018; Gunardi et al., 2021; Gurjia & Dhannoon, 2021; Hareri & Alama, 2020; Jamaludin & Salura, 2018; Kamarudin et al., 2020; Kassim et al., 2012, 2014; Mohd Sojak & Utaberta, 2013; Nirmala et al., 2019; Othman, 2011; Othman & Zainal-Abidin, 2011; Shafiq, 2014	**Arts.** Discussing the application of aesthetical theory on mosque's ubiquitous architectural elements, such as minaret, roof structures (dome, pyramidal, etc.), calligraphy, decorative arts, muqarnas, arabesque, and so on as ornamentation and decoration. This discussion is also related to the style of arts, as a result of one culture and the spirit of age.
5.	Abu A'mar, 2017; Adiputra & Salura, 2021; Ahani et al., 2017; Alajmi & Al-Haroun, 2022; Allahham, 2019; Apriyanti, 2022; Ardhiati, 2013; Awad, 2021; Bousmaha et al., 2019; Dewiyanti & Budi, 2015; El-Torky, 2018; Farazmand & Sarbangholi, 2014; Fatih et al., 2019; Fawaid et al., 2019; Galimzhanova et al., 2020; Gunardi et al., 2021; Gür, 2017; Gurjia & Dhannoon, 2021; Hareri & Alama, 2020; Holik & Aryanti, 2017; Ismail & Siraj, 2021; Jamaludin & Salura, 2018; Kassim et al., 2012, 2014; Mohamad Rasdi & Utaberta, 2010; Mohd Sojak & Utaberta, 2013; Nadyrova & Nadyrova, 2020; Nugraha & Ashadi, 2020; Othman, 2011; Othman & Zainal-Abidin, 2011; Özaloglu, 2017; Putrie et al., 2017, 2018; Suryandari & Azra, 2021; Ullah et al., 2020; Utaberta, Handryant, et al., 2015; Utaberta, Othman, et al., 2015b; Wekke, 2013; Wirakusumah	**Design theory.** Discussing the critical thinking of mosque architecture as a building type that contains design concepts as an intellectual product. The discussion includes the spatial organization, interior and exterior scale, the rationale of design decisions, and other technical aspects related to mosque architecture and its building elements.

No.	Reference papers	Field of discussion
	et al., 2021; Wismantara, 2012; Yan et al., 2015; Yusuf & Putrie, 2022; Zekrgoo, 2017	
6.	Allahham, 2019; Apriyanti, 2022; Awad, 2021; Batuman, 2016; Bousmaha, Chergui, and Zouaoui, 2019; Fawaid, Zamroni, and Baharun, 2019; Galimzhanova et al., 2020; Hoteit, 2015; Ismail and Siraj, 2021; Marhalim et al., 2015; Mohd Sojak and Utaberta, 2013; Nadyrova and Nadyrova, 2020; Nazhar, 2016; Nirmala, Violaningtyas, and Damayanti, 2019; Özaloglu, 2017; Putrie, Martokusumo, and Budi, 2017, 2018; Surat et al., 2011; Suryandari and Azra, 2021; Ullah, Sheikh, and Morris, 2020; Utaberta et al., 2015b; Wazir and Kamil, 2022; Wekke, 2013; Yan et al., 2015; Yusuf and Putrie, 2022; Zekrgoo, 2017	**Socio-cultural aspect.** Discussing the findings in a perspective of socio-culture as a context of the mosque building existence. It emphasizes on to perspective of value from one culture or ethnic groups, or certain community that related to the mosque. It is also discussing the relation of the community to the mosque existence.
7.	Adiputra and Salura, 2021; Allahham, 2019; Bousmaha, Chergui, and Zouaoui, 2019; Gür, 2017; Hareri and Alama, 2020; Kamarudin, Baydoun, and Mahidin, 2020; Kassim, Abdullah, and Mohd Taib, 2012; Kassim, Abdullah, and Taib, 2014; Nazhar, 2016; Rosniza Othman, 2011	**Psychology.** Discussing the finding or the results of the research that shows the relation between architectural design and human psychology. This includes the discussion about spatial experience, the spiritual effect, the sacredness feeling of ummah when visiting or seeing a mosque, that evoke emotions and create religious experience.
8.	Ismail and Siraj, 2021; Nadyrova and Nadyrova, 2020; Yan et al., 2015	**Sustainable design.** Discussing contemporary mosque design through its role in promoting the sustainable architecture/green design, such as environmental impact design, energy-efficiency design, building physics-based comfortable values, and locality value and resources response.
9.	Apriyanti, 2022; Ardhiati, 2013; Dewiyanti and Budi, 2015; Fatih, Herlily, and Kurniawan, 2019; Galimzhanova et al., 2020; Gür, 2017; Holik and Aryanti, 2017; Mohamad Rasdi and Utaberta, 2010; Nugraha and Ashadi, 2020; Özaloglu, 2017	**Architect episteme.** Discussing the mosque design through the perspective of the architect's epistemology. It emphasizes on the thinking and creative process of the architect when proposing and deciding a design as a result of his/her belief and knowledge, in a personal philosophical way.
10.	Ahani, Etessam, and Islami, 2017; Allahham, 2019; Destiarmand and Santosa, 2013; Dewiyanti and Budi, 2015; Fawaid, Zamroni, and Baharun, 2019; Fina, 2018; Galimzhanova et al., 2020; Ghasemzadeh, Fathebaghalli, and Tarvirdinassab, 2013; Gunardi et al., 2021; Gür, 2017; Holik and Aryanti, 2017; Hoteit, 2015; Mohamad Rasdi and Utaberta, 2010; Mohd Sojak and Utaberta, 2013; Nazhar, 2016; Putrie, Martokusumo, and Budi, 2017, 2018; Shafiq, 2014; Utaberta et al., 2015b, 2015a; Utaberta, Handryant, and Mydin, 2015; Wirakusumah, Antariksa, and Salura, 2021; Wismantara, 2012	**Philosophical aspects.** Discussing the result and finding of the papers from the philosophical realm as a basic thinking of mosque existence and design expression, which involves the principles, the meaning, and the process of conveying messages from architectural elements, within postmodernism paradigm.
11.	Abd Rashid and Ahmad, 2008; Abu A'mar, 2017; Adiputra and Salura, 2021; Ardhiati, 2013; Elrayies, 2018; Kamarudin, Baydoun, and Mahidin, 2020; Nirmala, Violaningtyas, and Damayanti, 2019; R. Othman and Zainal-Abidin, 2011; Suryandari and Azra, 2021; Ullah, Sheikh, and Morris, 2020; Utaberta et al., 2015a	**Religious aspects.** Discussing the result and finding of the papers about the existence of mosque as worship facility that has certain sacredness, with the perspective of Islamic teaching. This discussion may relate to certain school of thought, or certain religious organization's belief on Islamic teaching.
12.	Abd Rashid and Ahmad, 2008; Alajmi and Al-Haroun, 2022; Awad, 2021; Batuman, 2016; Destiarmand and Santosa, 2013; Elrayies, 2018; Farazmand and Sarbangholi, 2014; Fawaid, Zamroni, and Baharun, 2019; Fina, 2018; Galimzhanova et al., 2020; Ghasemzadeh, Fathebaghalli, and Tarvirdinassab, 2013; Gurjia and Dhannoon, 2021; Hoteit, 2015; Ismail and Mohd Rasdi, 2010; Jamaludin and Salura, 2018; Kamarudin, Baydoun, and Mahidin, 2020; Mohd Sojak and Utaberta, 2013; Nadyrova and Nadyrova, 2020; Shafiq, 2014; Surat et al., 2011; Suryandari and Azra, 2021; Ullah, Sheikh, and Morris, 2020; Zekrgoo, 2017	**History.** Discussing architecture of contemporary mosque as a part of historical development in one cultural form created by civilizations. This discussion involves the synchronic or diachronic perspectives, with the object discussion is the mosque existence and architectural elements as cultural artefact.

Discussion

The table above shows the 12 fields of study that can be categorized from the extraction of 59 papers analyzed. Referring to the main assumption of postmodern architecture that puts more attention to the human subjective role in architecture rather than the architectural works, the categories shown have proven that assumption [46, 47, 48]. The discussion of humans as main actor of the postmodernism in architecture here is seen in two dimensions, as individual and as community.

In the individual dimension, the discussion of the analyzed papers has been discussing aspects such as philosophy, religiosity, psychology, and the architect's epistemology. These aspects are operating within each person's cognition and sensitivity in perceiving phenomena that revolve around mosque existence, which result to intellectual decisions on how to respond to problems related the mosque architecture design process. In practice, these four aspects work together in creating mosque design as a cultural text. This text produced by the architect as an author, can be seen as a design manifesto that contains several statements in the form of architectural design. This text will be read by the public or ummah to be interpreted with certain meanings. Therefore, there are significant relationships among those four aspects of intellectuality in creating a mosque architecture in communication realm among the stakeholders of the mosque. To architects, there also an intention of communicating something within their belief and knowledge expressed into a design which may affect the religious experience of the ummah as they function the mosque in daily life.

While as community, humans as subjective role in mosque architecture here is considered the most important part that may define the existence of the mosque [49][50]. Since Islam is the missionary religion, meaning that the role of community is becoming vital regarding to the mosque daily use. The participation of the community and the role of the mosque that related to the identity of some elements in the community, can be explained in the papers above that discussing the political, communication, and socio-cultural aspects. These aspects are operating within the social life in the community in a certain context or culture, which can influence the planning, the design, and the daily use of the mosque, leading to the role and existence of mosque in a certain location [51, 52, 53].

In this domain, the community that is serving as a reader of the cultural text expressed in the mosque design, not only placed this facility merely as a building type, but also created the bond to it as if it is the representation of their spiritual lives. The values contained in the design intended by the architect are being examined in this domain, whether it is successful or not experienced by the ummah. The three aspects mentioned before surely rely on the interpretation of values to be expressed to the community through a design language.

Other than those two, the table also shown the category that put its discussion on to the substantial parts of the mosque. This category of study is emphasizing on how the mosque as an object of cultural form responses to the development of civilization [54][55]. This category can be divided into several aspects, such as semiotics, history, sustainable design, arts, and design theory. The discussion's objects of these papers are architectural design of the mosque as a product of human's culture. Ranging from designed architectural elements such as minaret, domes, ornamentation, and any other decorative arts, the building systems such as HVAC, lighting, and construction, to the signification of design elements that belong to the sign systems that ummah experience in daily life [32][56].

However, this category is not about the design expression or appearance on mosque architectural substances *per se*. There are still human's side involved in those, being the character of discussion about architecture as a works of culture and civilization. Meaning that these papers which classified under this category, they are still putting human intellectuality as a variable of research analysis. This also means that these aspects categorized in this category serve as the language of the design [57, 58, 59]. Referring to linguistic studies, these aspects can be seen as the style of how to communicate certain meaning and values into the design expression. Seeing the complexity of the domain and aspects involved in creating a design expression on mosque architecture as cultural text, so there are always possibilities of misunderstanding in reading the design language and vocabularies. This may lead to some controversies that caused any unproductive debates that may harm the integrity of ummah. The social and cultural disparity among ummah is one of the main causes of this controversy. Although to postmodernism in architecture this reading controversy on architectural design is an inevitable aspect and can be seen as a development of this domain, yet when it is happening to mosque architecture this issue still needs to be addressed carefully.

Based on the discussions above, it is obvious that the existence of a mosque in the contemporary era is not merely a worship facility that houses religious activities. The design expressed in its architecture is somehow not just an object of discussion of a cultural artifact. It is also an expression of concept and values of Islamic teaching manifested in the architectural forms, through the mode of representation called symbolism. The Islamic teaching contained in the symbolic design that encodes the meaning into a design language and architectural vocabulary is expected to be read by the public or ummah, as one form of *da'wah* using specific media [60]. This creative process is usually done by the architect or builder, that is seeing the Islamic teaching derived from the Qur'an and Hadith as a corridor of interpretation of the meaning of the symbolic design within the linguistic studies and semiotics realms [20, 61, 62, 63, 64].

CONCLUSION

Those 12 aspects of discussions that have been described above show that these are aspects that can be said as the primary aspects of contemporary mosque architecture discourse. Dominates by the human involvement in the mosque's existence, then discussing contemporary mosque architecture should be more emphasized in the ontological domain of the mosque that involves the community, the epistemological of the stakeholders in its development, or in the pragmatic and semantic aspects in the intention of using mosque architecture as a *da'wah* medium.

When looking the mosque architecture in today's paradigm, it is clearly seen that symbolism in design expressed in architecture is not a small topic of discussion, due to its complex relationship among stakeholders' comprehension of values and meanings of Islamic teaching, and of historicism aspect of the mosque as cultural artifact. The relation of 12 aspects in the perspective of symbolism theory are potential field to be studied.

By looking at those 12 aspects discussed above, there are still aspects that are not being discussed yet. Aspects like architect's epistemology in designing a mosque, design that affects psychology or experience of ummah, religion, and sacredness on mosque design, and sustainable design on mosque design are not much being explored as research topics. The opportunity to study mosque architecture in a postmodern paradigm is still wide open within those aspects, especially if the research is done in an interdisciplinary way.

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