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Review of Orientation In Traditional Indonesian Housing: Framework of Locality-Based on Islamic Architecture Design

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ABSTRACT

This study attempts to show that locality value in traditional housing orientations correlates with Islamic value. The diversity of cultures in Indonesia generate a strong custom in housing design and affect some elements, such as housing orientation. Lack of research regarding Islamic architecture perceives the locality values of traditional Indonesian houses in the orientation is feasible to observe. A systematic literature review reveals housing orientation values from fourteen scientific papers that consist of journals, books, and proceedings that explain locality values in housing orientation. Synthesize of those scientific papers in traditional housing orientation will be analysed based on Islamic architecture principles. In summary, these results show that culture or custom and natural adaptation are contained in traditional Indonesian housings. Furthermore, the Islamic architecture principles stated that those values are included in "respecting the culture" and "harmonious with nature". These results provide important insights into the development of Islamic-concept residential, which respects the local culture, responds to sustainable architecture discourse, and sticks to Islamic sharia law.

1. Introduction

The housing discourse is inseparable from dwellers' respective cultures, beliefs, habits, and geographic areas. Typically, traditional housing contains those elements and generally respects the environment without ignoring dwellers' needs; that is genius loci. Containment of genius loci is getting lessened due to the modern movement's misunderstanding to pursue the style and disregard local wisdom (Trisno et al., 2020). Process in design involving locality from climate, culture, and even recent local issues will lead the design to the spirit of the place (Salura et al., 2020a) (Salura et al., 2020b). In contrast, the ancestors had through years and beyond experience to create a building suitable to local conditions geographically and culturally. Dialogue of green building emphasizes thermal

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comfort, frequently scapegoating orientation and simply shifting the building orientation avoiding solar direction. Even though containment of housing locality is almost certain to improve the quality of dwellers and environment. Hence, the study about a locality in traditional housing is required to establish a proper framework of housing and support sustainability issues. Another significant aspect of sustainability from the locality aspect is the Islamic architecture value that supports the environmental issue.

Islamic architecture sourced from Quran, hadith, sunnah, and figh provides a complete framework in architecture to respond to Muslim dwellers' needs in practicing their faith (Omer, 2010b). As a belief, Islam promotes a Muslim house and influence substantially in physical or non-physical (Othman et al., 2015). A primary concern of Islamic architecture in this research is the housing orientation. No previous study has investigated the originality of orientation in Islamic housing. The principles of Islamic architecture stated by scholars also mention no rules in orientation explicitly (Omer, 2010a) (Indrawati et al., 2016) (Othman et al., 2015). Preliminary research highlights the key aspect of the rapid growth of Islam values in Indonesia was acculturation. Including the housing styles and rules of orientation in traditional Muslim housing in Indonesia were influenced by local culture. In Indonesia, Islamic architecture grew swiftly and vast around the archipelago and acculturated amicably to local culture (Idham, 2021). Acculturation is a feature of Islamic architecture in sociocultural strategy to arise a sense of neighbourhood and identity (Wiryomartono, 2014). Islamic architecture is undetachable to environmentally friendly requirements, where disgracing nature should not prevail in the Islamic built environment. Several lines of evidence express that values embodied in Islamic architecture promote preservation in the utilization of natural resources (Yusof, 2011) (Utaberta et al., 2015) (Indrawati et al., 2016). Previous research has established that the sustainability concept is urgently developed for physical, natural, and contemplating social tuning (Idham, 2018). In Idham (2018), social tuning is similar to the sociocultural strategy stated by Wiryomartono (2014).

A holistic study is required to prevent the chaotic understanding of the housing orientation of traditional Indonesian housing in line with Islamic architecture values. This study extend the previous research about building orientation of traditional Indonesian houses but holistically discussed (Hasan et al., 2022). Therefore, this study aims to explore kinds of literature regarding housing orientation in various areas of Indonesia. Difference culture, beliefs, and geography of Indonesia will emerge divergence understanding of housing orientation additionally. Research notices that culture is an identity of a society and is inseparable from their tradition (Ratunar Rahmatulloh et al., 2020). Attention to regionality value is an effort to preserve the local architecture and adaptable to the users through a strategic design approach (Purbadi et al., 2020). The Islamic architecture must endorse the concept of locality; as stated, actors' everyday practices are inseparable from their culture, activities, and spatial arrangement (Atmodiwirjo & Yatmo, 2021). Locality establishes an understanding of local values both physically and from a cultural everyday activity perspective that emerges spatial characteristic (Yatmo & Atmodiwirjo, 2013). One longitudinal study found that locality context in Islamic housing buildings in Indonesia inexorably requires study about orientation, leading to the bioclimatic building (Idham, 2018).

2. Methodology

Scientific documents pertain to traditional houses of Indonesia were collected to underpinning the understanding of orientation in locality context. Fourteen correlated publications comprise journals, proceedings, and book chapters for synthesizing the value of housing orientation. The outline of fourteen publications is displayed in Table 1.

Table 1
Outline of Scientific Documents

Outline of Scientific Author	Publication	Location	Findings	Keyword
	type			
(Santoso, 2008)	Book	Central Java & Yogyakarta	Based on north-south axes: mountain-ocean	Beliefs
(Suprapti, 2014)	Journal	Kudus, Central Java	South oriented house is for commoners, north for rulers.	Social status
(Idham, 2018)	Journal	Kebumen, Central Java	South oriented, respecting South Sea and air circulation	Beliefs, thermal comfort
		Kulon Progo, Yogyakarta	South oriented for wind breeze	Thermal comfort
		Demak, Central Java	Houses are facing the street	Main access
		Pati, Central Java	Houses are facing the street	Main access
		Sleman, Yogyakarta	South oriented to harvest the wind breeze	Thermal comfort
(Naing & Hadi,	Journal	Makassar, South	Various orientations:	Beliefs, Qiblah
2020)	Sulawesi		East refers to fertility, south direction considered good, west for Qiblah.	
(Wiryomartono, 2014)	Book	Kenyah, East Kalimantan	Direction of the house following the location of pole, to outside the village/ forest	Beliefs
(Susilo & Nalaralagi, 2015)	Journal	Lampung, Sumatra	Houses orientation are fcing the street	Main access
(Darmayanti, 2016)	Proceeding	West Java	Main doors should located on south-north, along to the River Ciwulan Stream (Wiryomartono, 2014)	Beliefs
(Fanggidae et al., 2019)	Journal	Kupang, east Nusa Tenggara	Oriented to south-north due to avoiding typhoon	Safety
(Putra et al., 2020)	Journal	Bali	North-south orientations, and axis to Mountain	Beliefs
(Siahaan, 2020)	Proceeding	North Nias	North-south orientation	Beliefs
(Zain & Andi,	Journal	West Kalimantan	Malay housings orientation	Main access,
2020)			were to the river, and Dayak housings orientation other natural sources	Natural resource
(Hutagaol et al., 2020)	Proceeding	North Sumatra	Housing direction to the mountain	Beliefs

(Asriningpuri, 2020)	Proceeding	South Tangerang, Banten	Housing directions are to north or south as rivers around flow	
(Izziah et al., 2021)	Proceeding	Aceh	East-west orientation used to following Hindu culture, then Qiblah direction, and for safety avoiding strong wind.	, ,

(1)

3. Results

The table above shows some of the leading Indonesian housing orientation characteristics comprise various reasons. Closer inspection of the table shows that researchers stated that beliefs, social status, thermal comfort, main access, Qiblah, safety, and natural resources influence Indonesian traditional housing orientation. One exciting finding is that beliefs underlie the housing orientations and spread to a variety of places. In addition, the archipelago culture engenders various ancestor civilizations and practices. Keywords of housing orientations elucidate broadly in the following next sub-chapters.

3.1 Beliefs

Ancestors' civilizations generated a comprehensive practice in housing orientation. Cosmological axes encompass north-south and east-west contributes to one complexity of where the house should face to. Javanese traditional houses emphasize north-south axes as their house orientation; however, not all Java regions employ this cosmological axis. Two classified Javanese society: *Abangan*, and *Santri*, that emerge distinction in housing rules (Ju et al., 2018). *Abangan* means "red", Javanese Muslim with syncretic beliefs, relate to animistic and rural aspects; while *Santri* is orthodox Muslim with Islamic purity practices, relate to Islamic life and market (Idham, 2018) (Ju et al., 2018). Inland Javanese *Abangan* tends to build their houses following the rule of the sacred south-north axis to respect the South Ocean Queen (Santosa, 2019). South axis also considering the royal palace as a symbol of ruler or leader in microcosm realm (Suprapti, 2014). Point of the compass as housing orientation is also found in the traditional Buginese house of South Sulawesi. Research by Naing and Hadi (2019) stated that Buginese in Tulengen Village avoided north as their house direction because they consider that north direction means less good. East and south are the dedicated wind direction for Bugis houses, which east symbolizes fertility and enthusiasm of life, while house facing to south direction brings comfortable experience (Naing & Hadi, 2020).

The Kenyah community in East Kalimantan also practises housing orientation towards belief. A pole is a sign of territory put on the outer part of the area towards forest or outside area and becomes the orientation of house facing (Wiryomartono, 2014). Community in Kampung Naga, West Java, has obligatory to built their home facing south or north (Darmayanti, 2016), this epitomizes the river stream of Ciwulan running from south to north (Wiryomartono, 2014). South and north orientation of houses also practised in Nias Island, which Oma Hada, its traditional house, faced (Siahaan, 2020). Nature is a sacred object found in Bali, where Mount Agung is considered the primary housing orientation (Putra et al., 2020). Settlement in Village Samosir is also oriented to the mountain, specifically the house for the king or his family (Hutagaol et al., 2020). While Aceh, well-known as Islamic culture, also has ancestral history about beliefs which east-west was the housing orientations (Izziah et al., 2021).

3.2 Social Status

Traditional houses in Kudus Kulon, Central Java, might hold special characteristics because it depends on social status. In her research, Suprapti (2014) stated that facing south houses is for

commoners, while rulers' houses face north (Suprapti, 2014). In addition, her research explains that consideration of house orientation promotes additional advantages encompassing controlled access and increasing privacy.

3.3 Thermal Comfort & Safety

Strong evidence of locality value relevant to apply in the current condition is the thermal comfort and safety feature. For example, Javanese houses in several areas tend to orient their house to the southern due to the wind breeze from the coastal, instead of mythical beliefs as *Abangan* houses believed (Idham, 2018). Another example, *Amu Hawu*, a traditional house in East Nusa Tenggara, which has an orientation to north or south, avoiding Thypoon hazard east to west (Fanggidae et al., 2019). Prevention from wind is also why traditional houses in Aceh oriented their house to east or west to protect their roof from strong wind (Asriningpuri, 2020).

3.4 Main Access

Research conducted by Idham (2018) also reveals the diversity of Javanese housing brings to variety in layout, façade, and orientation. Several northern coastal areas of Central Java tend to build housing without special meaning of orientation but main access. The primary orientation is just simply facing the street as dwellers' main access (Idham, 2018). The façade towards the street likewise the orientation of traditional houses in several regions of Sumatra. Researchers of The University of Lampung uncover that houses around that region face each other toward the street. Slightly different in the West Kalimantan region, traditional houses were oriented to the river as their transportation access; for the local Malay race, the houses are close to the river even though not strictly facing the river (Zain & Andi, 2020).

3.5 Natural Resources

A unique finding is that the Dayak race considers rivers as natural resources, together with sunlight, fertile soil, water source, and built their houses facing those natural resources (Zain & Andi, 2020). Other research elucidates the precious river to a Betawi community and symbolises the stream as their house orientation. Cisadane, Pesanggrahan, and Angke are the rivers around the Betawi community flow from south to north and reflect their house orientation (Izziah et al., 2021).

3.6 Qiblah

Before Islam came to Indonesia, Hindu, Buddhist, and animism growth all around the archipelago; hence, the ancestors' house orientations symbolize the beliefs and myths as the appreciation to their ancestral culture. As the Islamic culture came and received, ancestors adjust their housing elements, include orientations. Some of them kept their house facing the western due to symbolize Qiblah (Izziah et al., 2021). Buginese is intended to build their house toward Qiblah, considering the sacred orientation for Muslims (Naing & Hadi, 2020).

4. Discussion

Findings in this study elaborate on traditional Indonesian housing orientations considering these aspects: beliefs, social status, thermal comfort, safety, natural resources, main access, and Qiblah. In response to various housing orientations, Islamic architecture values are holistically studied to establish locality and Islamic architecture harmonization. Prior studies have noted that the importance of locality or regionality in design strengthens the search of harmonizing in Islamic architecture to local culture (Idham, 2021). This study reminds lessons from Prophet Muhammad PBUH about the

architecture of the Prophet's Mosque in Madinah, the function of the mosque remains but the form evolves in response to local culture, geography, and climate (Omer, 2010b). This lesson also applicable to other Islamic built environment, not limited to the mosque, due to changes are inevitable and urgently required (Omer, 2019). In addition, it is important to observing Islamic architecture concepts from several scholars and observing the values for this study in housing orientations.

4.1 Islamic Architecture Values

A great deal of previous research into Islamic architecture has emerged principles of Islamic architecture: 1) function-form correlation, 2) respecting the environment, 3) cleanliness, 4) comprehensive excellence, 5) promoting social interactions, 6) no inflicting or returning to harm, 7) harmonizing to indigenous and foreign influences (Omer, 2010b). The elaboration of principles of Islamic architecture from Omer can be seen in the following table 2. In her research, Indrawati (2019) has explored the relationship between Islamic architecture and the built environment. Islamic architecture at least should indicate these three points: Hasan (functional); Thoyib (good); and Jamil (aesthetic) (Indrawati et al., 2016)(Indrawati, 2019). Thus, an explanation of each point can be seen in table 3. Similar to a study about Islamic architecture, in a previous study on Muslim houses, Zulkeplee Othman has been found three points include in Muslim house comprise privacy, modesty, and hospitality (Othman et al., 2015). Detailed examination of Muslim houses by Zulkeplee Othman (2015) enhanced the involvement of previous research to this study and can be seen in table 4.

Table 2 Principles of Islamic Architecture by Omer (2010b)

Principles	Elaborations	Position to this study
Function-form correlation	Optimised the building and avoiding excessiveness	
Respecting the environment	Sustainable concept: accommodating the goodness of nature and preventing natural damage.	The statement is in line with the locality values in Indonesian housing orientation. The orientation aims for thermal comfort, safety in avoiding the disaster, and respecting natural resources.
Cleanliness	Cleanliness of physical body and built environment	
Comprehensive excellence	Well-planned built environment, including site, design, and material selection to strive the best performance of the built environment.	
Promoting social interaction	Enhance the hospitality and interaction between the users	
No inflicting or returning to harm	Nothing in Islam forbids except those that can harm users or	Allows arranging the housing orientation as the uniformity with

	impede civilization	faith, on.	culture,	and	local culture if not harming the faith.
Harmonizing to indigenous and foreign influences					

Table 3 Principles of Islamic Architecture by Indrawati *et al.* (2016)(2019)

Principles	Elaborations	Position to this study
Hasan (functional)	Housing configuration should ease its dwellers to practise faith and worship.	Towards Qibla orientation of a house eases the dwellers to arrange the space for Shalat.
Thoyib (good)	Caring the surrounding neighbourhood towards Islam is a religion brings mercy to all and universal	Uniformity of housing orientation with local neighbourhood and respecting the nature
Jamil (aesthetic)	Beautification in a proper way without leaving the Sharia	Uniformity of house orientation with local culture and custom. No transcendence elements are allowed except Islamic Sharia.

Table 4 Points of Muslim Houses by Othman *et al.* (2015)

Principles	Elaborations	Position to this study	
Privacy	Providing a sanctuary for dwellers to unwind and be protected from unlawful sight, listener, and olfactory.		
Modesty	Principles of modesty were established from tradition, culture, and religion. Humility in the design symbolized Islamic value and was reflected in sustainable living based. Modesty in Muslim houses is also implemented in provisioning space for practicing the faith.	Orientation of the house based on local culture can be accepted in terms of humility and uniformity to the neighbourhood without ignoring Sharia law. Orientation in Qiblah provisioning an ease layout arrangement to pray (Shalat). Orientation following the natural environment is also in line with the principle of modesty.	
Hospitality	House is a space to strengthen the relationship with society and extend hospitality by providing dedicated spaces in the house without disregarding the privacy value.		

To simplify the discuss between locality values with Islamic architecture, the study categorizes those seven localities into 2 categories: culture/ custom and adaptation to nature. Implementation of those Islamic architecture principles to localities and categories of traditional Indonesian houses can be seen in figure 1.

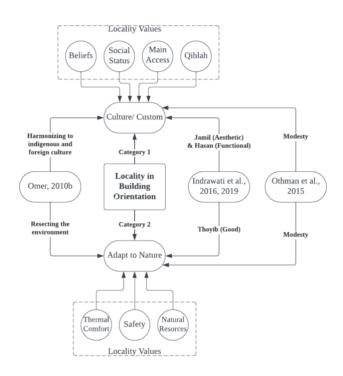


Fig. 1. Categorization of localities and position of scholars

4.2 Summary of Islamic Architecture values in housing orientation

What stands out in the tables above that it is now well established from a variety of studies that in terms of house orientation have considerably taken into account Islamic architecture values. From those three scholars, local culture/custom and adaptation to nature are required to be considered. Moreover, respecting local culture/custom and adaptation to nature is also highly recommended to establish sustainability in community and nature. According to these three scholars' statements regarding the house orientation, the study can infer that Islamic architecture observes the locality values in respecting the culture and harmonizing with nature. The summary of Islamic architecture values in housing orientation derived from scholars can be seen in figure 2.

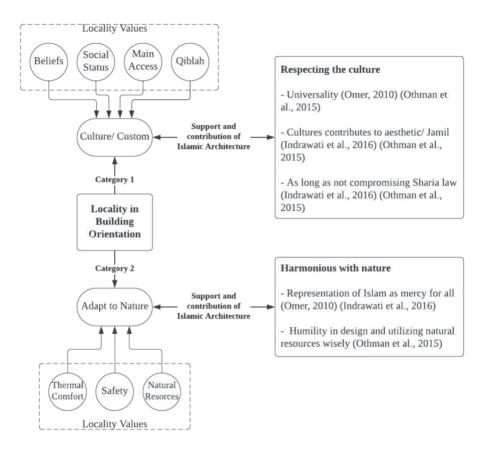


Fig. 2. Summary of the study

4.2.1 Respecting the culture

Blending with local cultures is an acceptance and to be accepted in the community and is in line with the statements of those scholars. Universality towards Islamic civilization is the key to facing the variety of cultures in Indonesia, which unity-in-diversity and an open-minded outlook in Islam be compelled to put forward (Omer, 2010b). The approach used in cultural diversity is similar to that used by Indrawati (2016). The cultural diversity in house orientation is sourced from beliefs, social status, and the main access is in conjunction with Jamil (aesthetic). A community with indigenous culture established everyday rules encompass house orientation. Like the statement of Othman (2015), Cultures, traditions, and religions occurred for years to establish modesty principles (Othman et al., 2015). The uniformity of house orientation in a community is considered an embodiment of aesthetics and modesty and reflects Islamic values' universality without ignoring the Sharia law (Indrawati, 2019) (Othman et al., 2015). In addition, Qibla as house orientation symbolizes Muslim direction in praying, considered to provide a simple layout to perform faith (Shalat).

4.2.2 Harmonious with nature

The last category of localities is about natural involvement and is closely related to the current issue of the environment. Those three scholars cited in this study agree to the principle of respecting

nature. Muslims as caliphs on earth should represent Islam as a mercy for all and avoid harming nature (Omer, 2010b) (Indrawati et al., 2016). On the other hand, Othman (2015) explained that humility in design and utilizing nature wisely reflect modesty in the Muslim house principle (Othman et al., 2015). Lastly, preventing natural damage is obligatory to Muslims and as an embodiment of Islamic architecture implementation in daily life.

4. Conclusion

Lastly, this study reveals the variety of orientations of traditional Indonesian houses. The orientations contain several category locality values that are summarized into the culture and natural adaptation. This study argues that the Islamic architecture principle of respecting the local culture and being harmonious with nature is in line with the traditional housing orientation values. The empirical findings in this study provide a new understanding of the orientation value of housing to enhance the locality and strengthen the spirit of a place. Certainly, the Tawhid oneness of God in Islam should be held tight, which worships no other God except Allah. Respecting the culture is highlighted as only uniformity in the neighbourhood in terms of house orientation. The findings of this study will interest the development of Islamic-concept residential in Indonesia, which considering local culture without ignoring Islamic architecture values. Moreover, the findings reported here shed new light on the discourse of sustainable architecture. Considering an orientation of traditional Indonesian housing is relying on natural ventilation of wind breeze.

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