The Influence of The Condition of Saint Theresia Church, Jakarta's Multimedia Room on Interest in Service at Daily Mass

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Abstract. Hindu-Buddhist temples in Indonesia have such uniqueness that distinguishes them from those that were built by other Hindu-Buddhist civilizations, such as India and Cambodia. This shows that there is an element of local genius. The purpose of this qualitative research is to explore elements of local wisdom in Nusantara temples and to trace the continuity of Nusantara dwelling architectural concepts which resulted in local wisdom inspirations as shown by the Srivijaya Buddhist temples in Padang Lawas and Muaro Jambi. Case studies of Batak Toba, Karo, Nias and Malay dwellings show traces of the architectural concepts passed down by early Austronesian civilizations in Nusantara to the Nusantara temple designs. Tribute to different cultures that coexist with each other also brought several similarities between architectural elements of Srivijaya Buddhist temples and those of Nusantara dwellings. The local community accepts Hindu-Buddhist temple design guidelines as a form of respect for Hindu-Buddhist teachings. However, the designs did not convey Indian architecture concept as the main principals of temple design. Existing collective memories among Ancient Nusantara people were one of the factors that enabled those differences between Nusantara temples and Indian Temples.

Keywords: Srivijaya Temples, Nusantara Architecture, Alignments, Form, Layouts, Ornaments

1 Introduction

In the celebration of the Eucharist, many parties are involved daily. This includes liturgical officers, congregations, and even multimedia officers. In the context of present days Eucharist celebration, multimedia officer has a role that is as important as the liturgical officers, this is due to one of the church's efforts to survive and thrive by utilizing the use of multimedia.

Even now, online mass is still considered useful and is widely attended by people who are unable to attend mass in person, such as the elderly, the disabled, and so on [1] [2]. In an effort to provide good service, the utilization of technology is required

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[3]. To meet these demands, facilities and staff are needed to operate them. Thus, the condition and comfort of the multimedia room are important to note because even on the less popular mass times, like daily mass, even when the congregation does not fully fill the church, multimedia equipment and operations are still needed.

Fig. 1. Saint Theresia Church today; Saint Theresia Church early 1900s [4]

The similarities of the two pictures above (figure 1), shows that Saint Theresia Church didn't have any major renovations in last few decades. This can be concluded not only from the presented images, but also from documents, and archdiocese of Jakarta's team for churches renovations stating that the Saint Theresia Church is a heritage building and must keep the original material from when it was first build [5]. As a result, the church's effort to utilize the use of technology may not be as efficient as it intended to be due to the restrictions of renovations.

Based on the initial observations, multimedia officers are less interested in serving the daily masses, resulting in them being the least popular mass schedule. This is due to the background of the operators, who are mostly office workers. The schedule of the masses is quite early and close to the office hours, namely 7 am and 6 pm. According to a brief discussion with several officers, other than the masses schedule, they felt that Saint Theresia Church's multimedia room could be improved in terms of comfort.

This study aims to provide possible solutions to the problems addressed by the multimedia room users, that is to say, the officers. The solutions will be obtained from the results of the questionnaire, with multimedia officers of the Saint Theresia Church as respondents and field data that are adjusted to the standards and provisions applicable in the multimedia room.

1.1 Problem Identification

Based on the introduction that has been explained, the problem identified is the lack of comfort in the multimedia room of the Santa Theresia Church. This conclusion is based on the assessment of the multimedia officers at the church with the research questions "What makes officers uncomfortable on service duty?", "How much does this factor affect their willingness to serve?" and "What design can be improved in the multimedia room that can increase the comfort of multimedia officers?".

This study focuses on the problems felt by multimedia officers of the Santa Theresia Church related to the multimedia room they work in. The discussion in this study focus on the officer's review of the multimedia room in Santa Theresia Church's comfort.

1.2 Professional Multimedia Control Room

The multimedia control room is the control center of the entire multimedia installation. All work areas of this personnel must have a direct and clear view of the stage. The glass separating the control room and the auditorium must be openable to facilitate communication. The set-up must be tilted to avoid reflections on the windows.

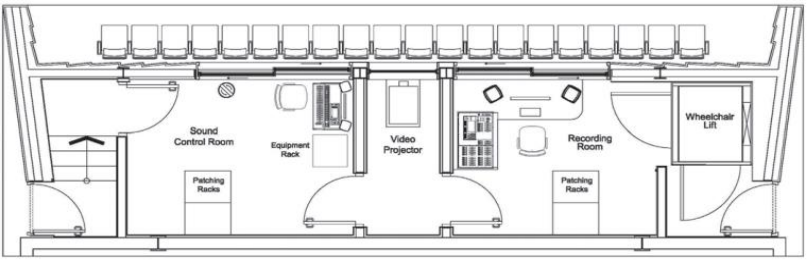

Fig. 2. Concert Hall Control suite: Guildhall School, Barbican, London, UK [6]

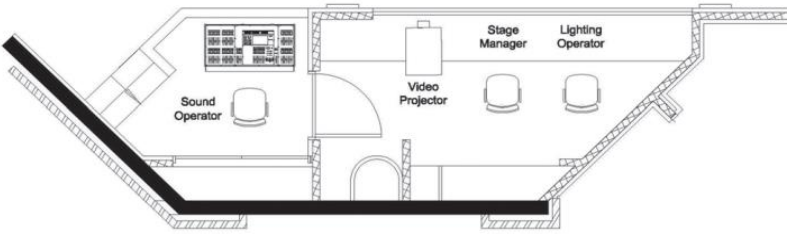

Fig. 3. Main Auditorium Control Room Hull Truck Theatre, Hull, UK [6]

As shown in figure 2 and 3, the control room placement for each part of the multimedia team does not always have to be together [6]. Multimedia used in the church has the same function as the use of multimedia in ballrooms, where it is only used for sound system purposes and the need to display mass videos or slide texts. Therefore, the minimum area per unit device can be the same based on table 1.

Table 1. Ballroom operator space size study [7].

Room	Capacity	Standard	Total Area (m^2)
Projector Room	2 pax	14 m^2 / pax	28 m^2 / pax
TV camera room	3 units	3 m^2 / unit	12 m^2 / unit
Lighting Room	4 units	3 m^2 / unit	12 m^2 / unit
Sound System Room	4 units	3 m^2 / unit	12 m^2 / unit
	Circulation 30%		19.2 m^2
	Total		83.2 m^2

1.3 Multimedia Application for Churches Mass Services

Multimedia output in the context of church work can be in the form of video texts of songs and readings or brochures as means of learning and promoting church activities [8], live streaming of mass both to the internet (YouTube) and broadcasting to the church extension room.

The benefits of multimedia in service include increasing the effectiveness of conveying information. In his book "Edutainment Method" Hamid says that humans can receive 50% of information from what they see and hear [9].

1.4 Perception in Context of Interior Design

The main purpose of interior design is to create a better more satisfying and enjoyable atmosphere for its user. This goal can be achieved by implementing several methods such as the selection of colors, decorative patterns, materials, and elements of the room that are in accordance with their function, as well as creating harmony through dimensions and furniture layout. The layout is made in accordance with the purpose and function without ignoring the circulation of the user of the room. These things can create a psychological impression on the room that will affect the perception of its users [10].

2 Research Method

As a research with a relatively small population of subjects and research objects, the quantitative inductive method is considered applicable and appropriate to provide solutions for the issues obtained from early field observations. Like qualitative research in general, data collection was carried out through a questionnaire survey of ten members of the KomSos (social communication) organization of the Saint Theresia Church. This population has been filtered through observations of task frequencies for the previous two months. To obtain more accurate data and consider the advantages of research in terms of population size, the questionnaire survey was conducted twice. Visual depiction of the research flow as shown in figure 4.

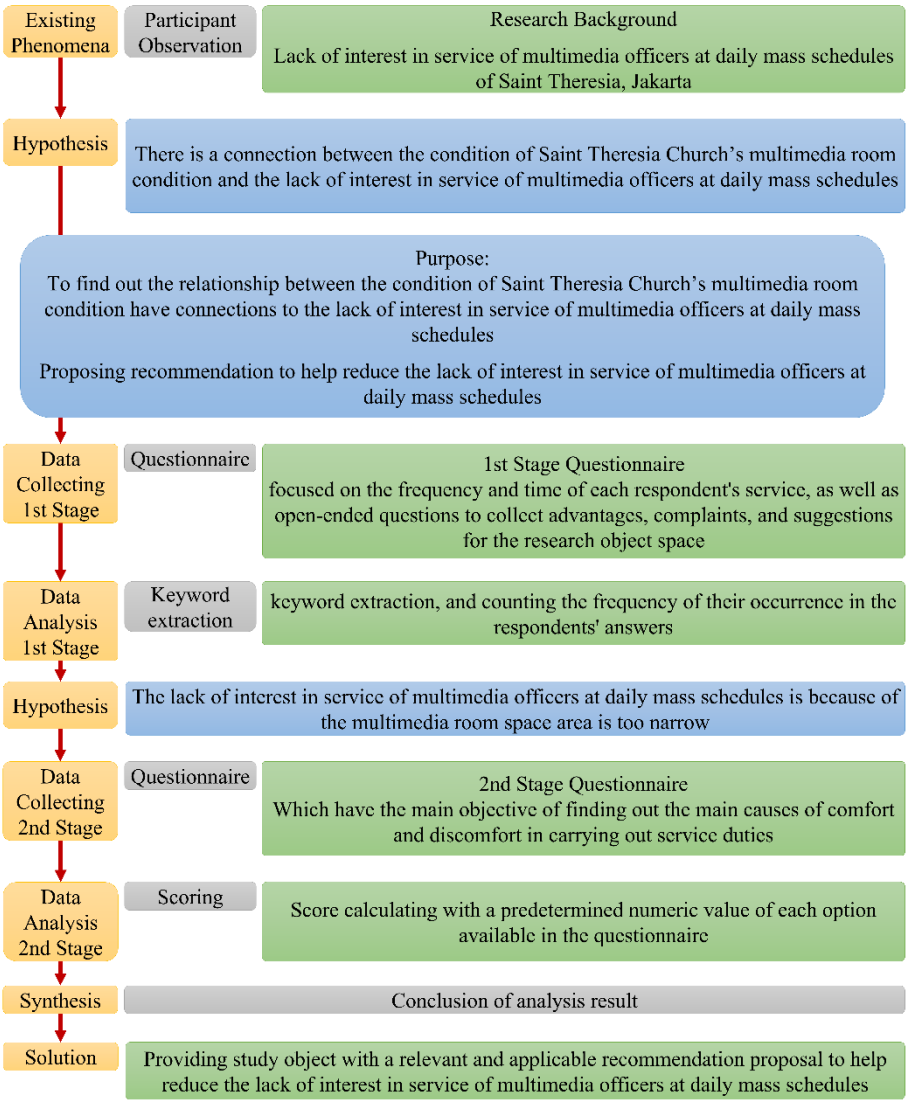

Fig. 4. Research flow diagram (Authors, 2024)

2.1 Data Collection (Questionnaire)

Site Observation was conducted before the research to acquire data requirements such as dimensions and room plans. Theoretical studies were conducted simultaneously with the entire questionnaire distribution stage to obtain technical standard that meet the needs of the space function.

The first stage questionnaire focused on collecting data on the frequency and time of each respondent's service, as well as open-ended questions to collect advantages, complaints, and suggestions for the research object space.

The second stage questionnaire has the main objective of finding out the main causes of comfort and discomfort in carrying out mases service. With a questionnaire that contains scaled question from one to five (1-5) rating keywords that have been obtained from the analysis of the answers to the previous stage questionnaire. This stage is carried out in parallel with the second stage literature review which focuses on finding possible solutions to the hypothesis after analyzing data from the first stage questionnaire.

2.2 Data Analysis

The data collected from the first stage questionnaire were then analyzed through keyword extraction and by counting the frequency of their occurrence in the respondents' answers. At the end of this stage, conclusions (hypotheses) were drawn in the form of reasons that influence the willingness and unwillingness to serve.

In the second stage of analysis, the scores of each factor were counted according to the equations shown in figure 5. The value for each numeric scale were determined by the researcher. The frequency of selecting a numeric scale was then multiplied by the previously determined value to obtain a score, which then sorted according to the scoring results based on the category of each factor.

frequency of selecting * determined value = Score

Fig. 5. The formula to calculate the value of each factor that influences comfort (Author, 2024)

2.3 Pre-research Data (Observation)

The less popular daily mass schedule among multimedia officers was noticed by the researcher through field observations. Observations were carried out by researchers for a month in March 2024. Observations were made through participant and non-participant observations by attending daily masses during the observation month. Based on observations of eighteen weekdays in March (excluding the first Friday, Maundy Thursday, and Good Friday) there were only six days where the multimedia devices were operated by officers. During those six days, it was observed that there was only a total of two people on service duty.

2.4 Multimedia Room Plan (Existing)

The multimedia room in the Santa Theresia Church in Jakarta is located at the back of the church, in the furthest position from the altar (as shown in figure 6), with windows that are 2/3 of the southeast wall.

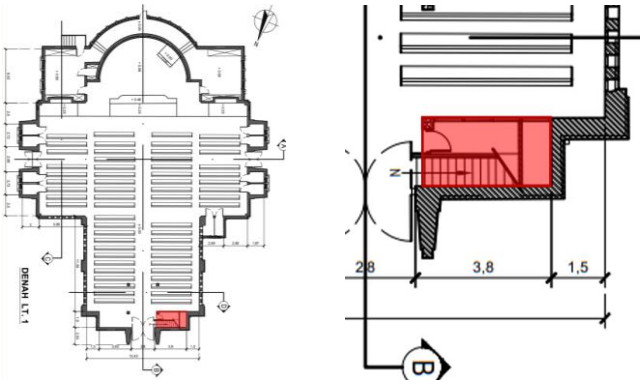

Fig. 6. Position of the Multimedia Room in the Church [5] (edited by author, 2024)

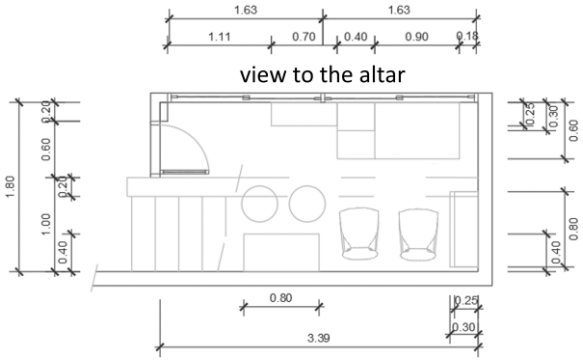

Fig. 7. Multimedia Room Layout (Author, 2024)

The area of the multimedia room is six point one (6.1) square meters, with the layout settings as shown in figure 7. The effective area of the multimedia room is further decrease by the staircase. As seen in the images of figure 8, the staircase occupies about a quarter (¼) of the total available space.

Fig. 8. Multimedia Room is located under the stairs (Author, 2024)

3 Results and Discussions

3.1 Data from the Phase 1 Questionnaire

Through the questionnaire, several factors that influence comfort and discomfort were obtained, as well as aspects that can be improved according to each respondent. Six architectural factors that influence comfort were obtained, namely, easy-to-operate equipment, cool rooms, comfortable rooms, good room facilities, indoor tranquility, and privacy. The result of phase 1 questionnaire 'supporting factors of comfortability' section is summed in figure 9.

Key Words	Questionnaire answers									total
Ease in operating	1								1	2
Cool temperature		1					1			2
Comfortable room		1			1					2
Good facility			1							1
Peaceful and quiet						1				1
Private							1			1

Fig. 9. Frequency table of supporting factors of comfortability (Author, 2024)

Based on answers from the respondents, four architectural factors were obtained that caused discomfort when working, namely, poor quality furniture in the room, visibility to people outside the control room, dazzling light, and a room that was too narrow. The result of phase 1 questionnaire 'opposing factors of comfortability' section is summed in figure 10.

Key Words	Questionnaire answers									total
Poor quality furniture		1								1
Visibility				1			1			2
Glare							1			1
Narrow area									1	1

Fig. 10. Frequency table of opposing factors of comfortability (Author, 2024)

Through open questions regarding suggestions for improvements to the multimedia control room, three inputs were obtained regarding architectural aspects from respondents which were summarized in the keywords, namely, expanding the room, and improving furniture, improving the room's enclosing elements. The result of phase 1 questionnaire 'suggestions' section is summed in figure 11.

Key Words	Questionnaire answers										total
Area expansion	1			1	1	1	1	1		1	7
Furniture renewal		1									1
architectural element renewal		1		1				1			3

Fig. 11. Frequency table of suggestion data (Author, 2024)

3.2 Phase 1 Questionnaire Analysis

Based on the summarized data, the initial hypothesis was obtained that the factors that make officers comfortable while on duty or willing to be on duty were ease of handling equipment, room comfort, and cool indoor air. The most influential factor in discomfort was visibility by the congregation passing by. In addition, there were also suggestions for improvement with the most frequency mentioned in respondents' answers, namely the expansion of the multimedia control room.

Keywords were then made into statements for questionnaire 2's scaled questions. The statements are listed below in Table 2, 3, and 4 for supporting factors, opposing factors, and suggestions respectively.

Table 2. Statements based on keywords from questionnaire 1(supporting factors)

No	Code	Question for the second stage
1	Service	I became an operator because I wanted to serve
2	As a substitute	I became an operator as a substitute another officer who was absent.
3	Mass	I became an operator while also attending mass.
4	Fun Friend	I became an operator because of the existence of fun friends.
5	Ease in operating	I became an operator because multimedia equipment is easy to operate.
6	Cool temperature	I became an operator because of a cool (temperature) multimedia room
7	Comfortable room	I became an operator because of a comfortable multimedia room
8	Good facility	I became an operator because of the multimedia room's good facilities
9	Peaceful and quiet	I became an operator because the multimedia room is peaceful and quieter
10	Private	I became an operator because the multimedia room is more private.

Table 3. Statements based on keywords from questionnaire 1(opposing factors).

No	Code	Question for the second stage
1	Boring	The atmosphere in the multimedia room was monotonous or boring.
2	Poor accessibility	I became an operator because the distance from my house to the Santa Theresia Church is close.
3	Poor quality furniture	The quality of the furniture in the multimedia room is good.
4	Visibility	I object to being seen by people passing in front of the multimedia room.
5	Glare	The multimedia room receive massive sun glare
6	Narrow area	The multimedia room is spacious

Table 4. Statements based on keywords from questionnaire 1(suggestion data).

No	Code	Question for the second stage
1	Equipment Training	Equipment handling training is good
2	Equipment Upgrades	Equipment in the multimedia room is up to date
3	Area Expansion	Multimedia room needs to be expanded
4	Furniture renewal	Furniture in the multimedia room needs to be updated
5	Architectural element renewal	The spatial elements in the multimedia room need to be repaired (staircase wall, see-through windows)

3.3 Data from the Phase 2 Questionnaire

Based on the data obtained from the second phase of the questionnaire, which are summed in the table in figure 12 and 13, the coolness of the room is the main factor that makes officers want to be on duty. With factors that are quite influential on discomfort while on duty being visibility and a narrow space area. Among the respondents, eight out of ten (8/10) felt that the multimedia room needed to be expanded.

	Kode	Negative	1	2	3	4	5	Positive
Comfortable	Ease in operating	Disagree	1	1	4	3	1	Agree
	Cool temperature	Disagree			1	1	8	Agree
	Comfortable room	Disagree			3	4	3	Agree
	Good facility	Disagree		1	1	6	2	Agree
	Peaceful and quiet	Disagree		1	1	2	6	Agree
	Private	Disagree	1	1	4	2	2	Agree

Fig. 12. Second stage questionnaire answers table, "comfortable" section (Author, 2024)

	Kode	Negative	1	2	3	4	5	Positive
Uncomfortable	Poor quality furniture	Agree		2	3	3	2	Disagree
	Visibility	Agree	6	1		3		Disagree
	Glare	Agree	1	1	3	4	1	Disagree
	Narrow area	Agree	5	3	2			Disagree
Suggestion	Area expansion	**NOT** needed				2	8	Needed
	Furniture renewal	**NOT** needed	1	1		3	5	Needed
	architectural element renewal	**NOT** needed			1	5	4	Needed

Fig. 13. Second stage questionnaire answers table, "uncomfortable" and "suggestion" section (Author, 2024)

3.4 Phase 2 Analysis

The frequency data of the values chosen by the respondents for each factor affecting comfort on duty was then multiplied by the predetermined value for each point given by the respondents. Based on the calculation and ranking, the coolness and condition of the multimedia control room are the factors that encourage interest in service duty the most. In addition, another architectural factor that also influences interest in service duty is the condition of the space, which tends to be quieter than in the congregation area. Visual analysis is included in figure 14.

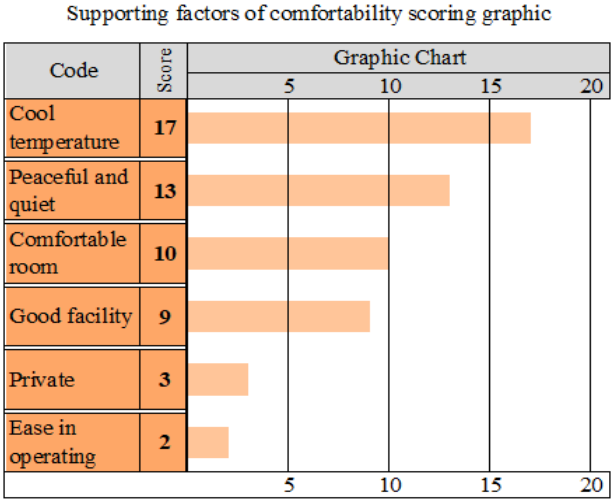

Fig. 14. supporting factors of comfortability scoring (Author, 2024)

The coolness or the temperature in the room can cause chills, which can potentially be a factor of discomfort. However, based on a brief interview with 5 out of 10 respondents, all of them claimed not to mind the low temperature in the multimedia room.

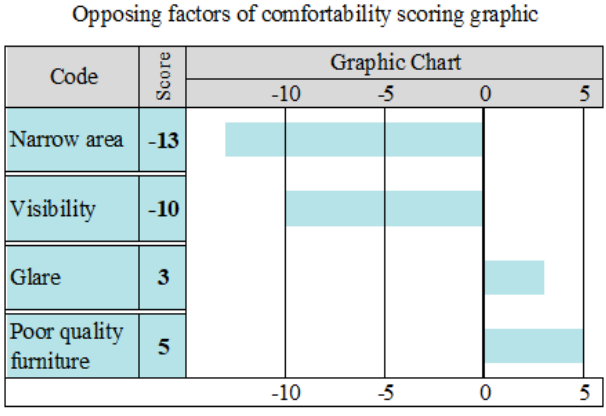

Fig. 15. opposing factors of comfortability scoring (Author, 2024)

Based on the data, it can be concluded that the factor that makes officers most uncomfortable is in line with the proposed improvements that most respondents agree on, namely the expansion of the multimedia control room area. Visual analysis can be viewed in figure 15.

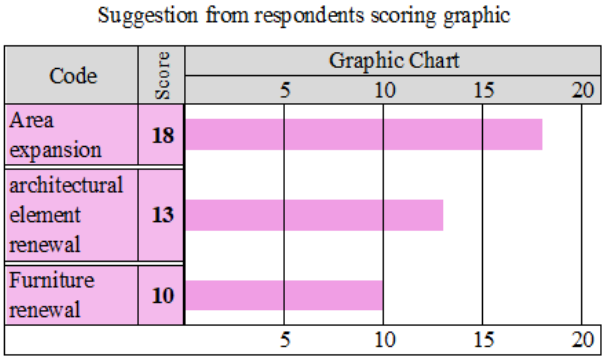

Fig. 16. Suggestions from respondents scoring (Author, 2024)

As seen in the graph in figure 16, area expansion is the suggestion with the highest score, makes it the most selected suggestion. Expansion is an issue because of its effect that is directly felt by the user (perception). The perception effect of a narrow room can be caused by various interior elements, such as wall color selection, furniture size and model selection, and furniture arrangement [10]. A relatively dark wall color can increase the perception of a narrow space [11]. However, in the context of the multimedia control room at Santa Theresia Church, the wall color of this room is bright, but not accommodated with adequate lighting. With relatively dim lighting, the multimedia control room feels more private, one of the factors supporting service duty interest, but causes the perception of a narrow space [12]. The multimedia room also feels increasingly cramped due to the addition of up-to-date facilities. The unplanned addition of equipment for broadcasting purposes resulted in an inefficient placement in the room which led to the restriction of staff movement during mass. Regardless of how perception affects humans, with the equipment that facilitates the multimedia control room of Santa Theresia Church, an area of twelve (12) square meters is required (table 5), while the existing space is only six point one (6.1) square meters.

Table 5. Calculation of the area requirements for the multimedia control room of Santa Theresia Church [7], sorted by author, 2024

Room	Capacity	Standard	Total Area (m^2)
Sound system & camera monitor room	3 units	3 m^2 / unit	9 m^2 / unit
Circulation 30%			3 m^2
Total			12 m^2

As a proposed solution, it is time for Santa Theresia Church's multimedia room to be expanded in order to accommodate the equipment and officers who will serve. Given the condition of the multimedia room against the church space, it seems that the expansion will be quite difficult to realize. Replacing equipment with a digital system can also be an option since the devices required are not as many as analog systems.

4 Conclusions and Suggestions

Through the collection of data from multimedia operators of Santa Theresia Church, which was carried out in two phases of questionnaires, it can be concluded that there is no significant difference between interest of service duty in the afternoon and morning daily mass. There are several architectural factors that support the willingness to be on service duty such as room coolness, calmness, comfort, privacy, and ease of equipment operation. There are also architectural factors that do not support the interest to be on service duty, such as poor-quality furniture, glare, visibility by parishioners who attend the mass, and the size of the room which is considered to be very narrow by respondents.

Through further theoretical studies to interpret the results of the analysis, it was found that the existing space area, which is six point one (6.1) square meters, does not comply with the standard area. Based on the existing equipment, at least twelve (12) square meters is required to accommodate the officer's need for comfortable movement space.

As a proposed solution, an expansion is necessary in this case, but if it is not possible, switching from an analog system to a digital system can help solve the problem of insufficient space as it requires less space for the devices.

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References

1. V. Ballano, "COVID-19 Pandemic, Telepresence, and Online Masses: Redefining Catholic Sacramental Theology," The International Journal of Interdisciplinary Global Studies, vol. 16, no. 1, pp. 41-53, 2021.
2. wikimedia commons, "Media in category "Saint Theresia Church (Jakarta)"," wikimedia commons, 30 June 2024. [Online]. Available: https://commons.wikimedia.org/wiki/Category:Saint_Theresia_Church_%28Jakarta%29. [Accessed 4 October 2024].
3. A. A. Sihombing, R. P. Manik, J. Saepudin, R. K. S. Imansah and Z. H. Prasojo, "Online Mass Services during the Pandemic: Catholic Perspectives—Between Solutions and Theological Tensions," Toronto Journal of Theology, vol. 39, no. 2, pp. 145-153, 1 October 2023.
4. A.-P. Cooper, S. Laato, S. Nenonen, N. Pope, D. Tjiharuka and E. Sutinen, "The reconfiguration of social, digital and physical presence: From online church to church online," HTS Teologiese Studies / Theological Studies, vol. 77, no. 3, 17 June 2021.
5. PPG Theresia, "Meeting Minutes: August 26, 2023," PPG Theresia, Jakarta, 2023.
6. J. Strong and Association of British Theatre Technicians., Theatre Buildings: A Design Guide, New York: Routledge, 2010.
7. D. R. Santoso, "Gedung Konvensi dan Pameran di Surakarta Dengan Penekanan Desain Post Modern," UNDIP Institutional Respository, 2015.

8. A. Afolaranmi, “Effective Use of Technological Tools in Building the Church’s Educational Ministries,” SSRN, 1 July 2020.
9. M. S. Hamid, Metode Edutainment, Yogyakarta: Yogyakarta Diva Press, 2011.
10. R. Angkouw and H. Kapugu, “Ruang Dalam Arsitektur Berwawasan Perilaku,” Media Matrasain, vol. 9, no. 1, 2012.
11. A. Baum and G. E. Davis, “Spatial and Social Aspects of Crowding Perception,” vol. 8, no. 4, December 1976.
12. M. Hvass, K. V. D. Wymelenberg, S. Boring and E. K. Hansen, “Intensity and ratios of light affecting perception of space, co-presence and surrounding context, a lab experiment,” Building and Environment, vol. 194, May 2021.