

# Interior Design Analysis of Terengganu Traditional Malay House

\* Salem Alqamaz \*\* Mohd Hisham Bin Omar \*\*\* Marzuki Ibrahim  
\*\*\*\* Hisham Lababneh \*\*\*\*\* Tawfeeq Awawdeh

(Faculty of innovative design & technology, University Sultan Zainal Abidin 21300 Kuala Terengganu, Malaysia)

\*\*\*\*\*

## Abstract:

In this regard, this paper aims to interior design analysis of Terengganu traditional Malay houses (TTMH). Then, the paper employs a quantitative approach by creating a new survey questionnaire that can be used as a broad model and new instrument to help collect data about the design elements and the factors that influence the choice of TTMH. Furthermore, this paper method consists of distribution the questionnaire among 384 citizens of Terengganu, and the data were analyzed using Statistical Package for Social Sciences (SPSS). In this respect, the results of the study showed a correlation among factors of the interior design of TTMH, which proves that when we want to maintain them, there must be a correlation among these factors and not lose any part of TTMH which may lead to the loss of more houses. In conclusion, this research has established an “interior design elements of Conservation for the TTMH,” these elements will be successful if correctly executed in addition to the current level of protection at either national, state, local, or district level. Finally, further studies can integrate to a more comprehensive, informative and extensive framework.

**Keywords —Traditional Malay House, Interior Design, Space Planning, Terengganu.**

\*\*\*\*\*

## I. INTRODUCTION

The local people of Terengganu have their own identity especially in expressing construction,with their massiveinformation in building traditional Malay house and cultural impacts. Terengganu house is a conventional type of Malay house that is indigenous to Terengganu. These houses can be found mainly in most areas of Malaysia. Also, the structure techniques of several components in Terengganu houses be analyzed and documented. As time passed by, the construction of the traditional Malay house or Terengganu house is no longer practiced by the younger generation. The term “traditional” seems no longer valid in the current area. A study on Terengganu house is basically to explore the history and the origin of Terengganu itself. Also to know precisely the technique used in thestructure of Terengganu

housewith the exploration of the structureapproaches, specially the mortise technique, it will give a point view to the next generation on the uniqueness of our building method of Terengganu house. Terengganu house has many unique features which are really interesting that contribute to sustainable architecture such as bamboo matting wall and raised floor. It shows how Terengganu traditional Malay house embraces and interacts with nature. In today’s building design, sustainability is a must characteristic that should include in order to give minimal impact to the environment with the study of the arrangement of the interior space; we can clearly see the provision of space based on the priority of the area. with over the age of hundred years old and above, Terengganu house has uniqueness in terms of fineness carved on the opening of windows, doors, and walls and use a range of mortise (tanggam).

The younger generations need to be bare to such traditional Malay house characteristics so that the information can be inherited to the future generations. Due to the lack of knowledge and sense of appreciation of the younger generation, with no doubt, the traditional Malay house probably disappears for near coming years. It stands for the reason that Malay traditional house especially Terengganu traditional Malay house need to be explored and conserved [1].

The architect of MEGTW building has learned from the master builder of traditional Malay house about interior planning. The internal planning of MEGTW building was designed based on the importance of space and electrical usage. such as overall office and working area wasintendedto face the source of natural lighting whereby it is situated near the windows and the glass wall that faces the atrium skylight. The insignificant space that is infrequently used such as the meeting room, storage area, and staff pantry was located in the core area of the structure. This layout design can reduceelectrical and artificial light consumption during the day [2].

Basically, the plan of Malay vernacular houses is designed based on a deep understanding of the functions which will be performed inside. The inter-relativity of spaces and the space adjacencies inside a Malay house is based on a clear perception of how what and when these activities will be carried out. Consequently, it leads to the functional spaces which are consistent with their own allocated functions. As a result, the optimal use of space with the appropriate level of privacy will be achieved. Hence, the functional areas which are considered as private spaces are located at the back while the public areas are located at the front of the house [3].



Figure 1.1: Example of Terengganu Traditional Malay House

[1] said too, Times have altered when the modern-style construction is more contrast and control the life of the communal today that it drowned the traditional residence which should be respected by all parties. have the same standpointsthat the extinction of vernacular architecture (local) is because of influenced by the differing lifestyles, have gone under transformations due to the changing social and cultural structure. Therefore, the documentation of the characteristics of these traditional dwellings becomes a necessity for theirprotection.

The existence of Malay architecture has something to do with the communal and their way of life. This way of life effects in the creation of architecture and designs that contains aesthetic values. Traditional Malay architecture of Terengganu is also deemed as a guide and an epitome a appearance of a community that represents its people whofirmlyadhere to their customs. All their beliefs are represented in symbolic forms through a village and space planning, crafting artisticbeliefs in carvings as well as their unique designs[4].

In addition, the facade of this house demonstrates a symmetrical layout which is the

strong characteristic of western bungalows, with the anjung placed at the center, while the entrance stairs are located to the side of the anjung, maintaining a vital feature of the traditional vernacular house where they can approach the anjung, a reception space through outside stairs [5].

**II. METHODOLOGY**

The current study will adopt method design since it will include quantitative instruments such as a questionnaire [6]. This quantitative approach will be used to gather more information from the target population from Terengganu. For answering a survey questionnaire, the survey might be a suitable tool that would provide the answer to the research questions. In this regard, [7] mentions that the questionnaire is more popular; it is capable of gathering a large amount of information.

The respondents of the current study are Terengganu citizen. The reasons for choosing this population in the present study are: firstly, to be the population informed in Malaysia culture and Terengganu traditional Malay houses. Secondly, this population will give areview of exact information and scientific information about Terengganu traditional Malay houses. So, the study was taken correctly these population which makes up the full percentage of the study area without exception any person in any position and any work. Length of the questionnaires was found to influence the response rate [8], [9], [10]. In this regard, the final version of the poll was kept short, with 60 items printed on four pages. The duration of the survey should be relatively quick to facilitate respondents completing the survey between 10 and 15 minutes.

For the analysis of the study, data will be analyzed by the Statistical Package for Social Sciences (SPSS) program, through Principal Component Analysis (PCA): is a statistical method aimed at interpreting positive correlation

coefficients that have statistical significance between different variables [11], [12], Cluster Analysis: is a type of analytical method that can be applied to data that reflects "normal" groups[13].

**III. RESULT AND DISCUSSION**

Table 1: KMO and Bartlett's Test of interior design factors

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			.603
Bartlett's Test of Sphericity	Approx. Chi-Square		3102.8
	df		190
	Sig.		.000

According to table 1, the data in the above table indicated that the value of Kaiser-Meyer-Olkin test was high (0.5) which means the sample is sufficient and appropriate; also the data showed that Bartlett's Test value is significant (.000) which means that the matrix is the unit matrix.

The KMO measures the sampling adequacy (which determines if the responses given with the sample are adequate or not) which should be close than 0.5 for a satisfactory factor analysis to proceed. Kaiser (1974) recommend 0.5 (value for KMO) as a minimum (barely accepted), values between 0.7-0.8 acceptable, and values above 0.9 are superb. Looking at the table belowthe KMO measure is 0.603, which is close to 0.5 and therefore can be barely accepted.

Bartlett's test is another indication of the strength of the relationship among attributes. This tests the null hypothesis that the correlation matrix is an identity matrix. An identity matrix is a matrix in which all of the diagonal elements are (1), and all off-diagonal elements (a term explained above) are close to 0. You want to reject this null hypothesis. From the above table, we can see that Bartlett's

Test is significant (0.000). That is, the significance is less than (0.05). It is actually (0.000), so the significance level is small enough to reject the null hypothesis. This incomes that the correlation matrix is not an identity matrix.

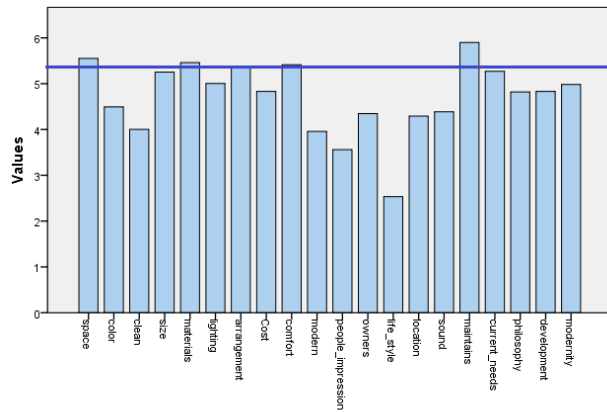


Figure 2: Mean bar graph of the interior design

Figure 2 describes the mean for interior design factors, where can notes that most of the elements mean was above (4), which means that the arithmetic mean high, and the highest mean for (maintains) element, then (space), then (materials) at third rank, then (comfort) came at fourth rank, while the (lifestyle) got the lowest rate of approval among the other factors.

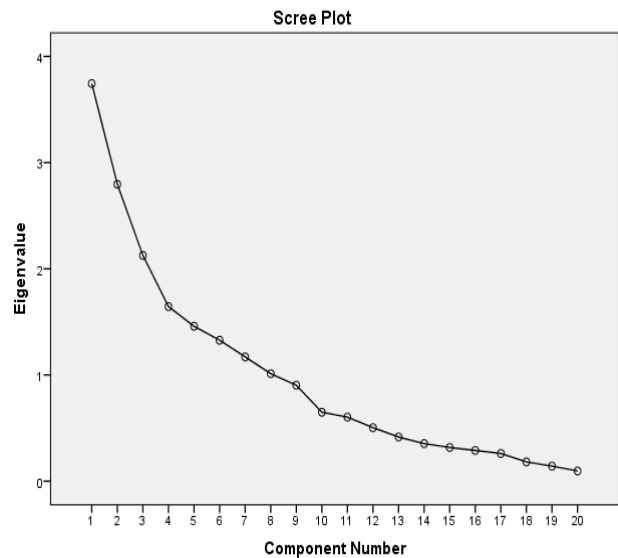


Figure 3: Screen plot graph of interior design factors

The figure 3 scree plot is a graph of the eigenvalues against all the elements. The graph is useful for decisive how many elements to retain. The opinion of attention is where the curve starts to smooth. It can be seen that the curve begins to smooth between elements 8 and 9. Note also that factor (9) onwards have an eigenvalue of less than 1, so only eight elements have been retained.

From the above table and figure can indicate that there are (8) factors, as follow:

First Factor: This factor represents (18.720) of the total variance. This ratio indicates that this factor is of great importance. This factor includes (8) attributes (space, color, size, materials, arrangement, comfort, maintains, and current needs) with a saturation of (.646, .534, .663, .552, .513, .569, .562, .603) respectively.

Second Factor: This factor represents (13.979) of the total variance. This ratio indicates that this factor is of great importance. This factor includes (5) attributes (materials, people's impression, location, sound, and philosophy) with a saturation of (.603, .502, .612, .504, .525) respectively.

Third Factor: This factor represents (10.632) of the total variance. This ratio indicates that this factor is of great importance. This factor includes (3) attributes (clean, development, and modernity) with a saturation of (.603, .742, and .696) respectively.

Fourth Factor: This factor represents (8.223) of the total variance. This ratio indicates that this factor has some importance. This factor includes (1) attribute (location) with a saturation of (.606).

Fifth Factor: This factor represents (7.293) of the total variance. This ratio indicates that this factor has some importance. This factor includes (1) attribute (owners) with a saturation of (.526).

Sixth Factor: This factor represents (6.639) of the total variance. This ratio indicates that this factor has some importance. This factor includes (1) attribute (modern) with a saturation of (.609).

Seventh Factor: This factor represents (5.853) of the total variance. This ratio indicates that this factor has some importance. This factor includes (1) attribute (cost) with a saturation of (.578).

Eighth Factor: This factor represents (5.061) of the total variance. This ratio indicates that this factor has little importance. This factor includes (1) attribute (lifestyle) with a saturation of (.536).

Figure 4: Dendrogram of interior design factors

From the figure 4 it can be noted that the factors or groups that were linked together were identified in each step of the analysis, where can observe that, at the first step there were (17) factors collected together in the first step through a number of partial groupings among factors to produce one group, also the data showed that factor (10) joined the first group at the second step to provide the second group, then the factor (11) joined the second group at the third step to provide the third group, and finally the element (13) entered the other factors at the last stage.

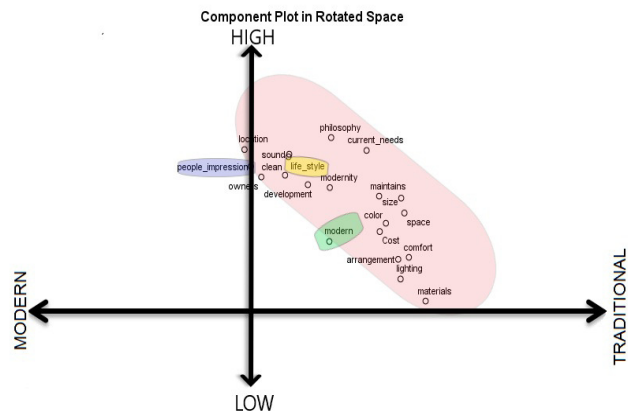
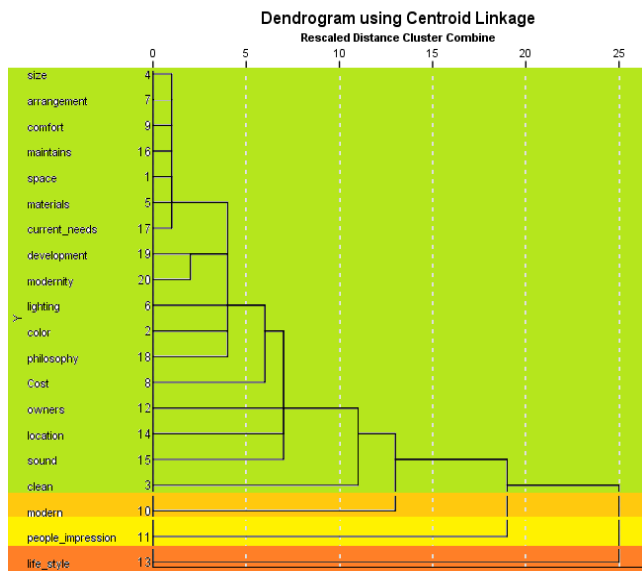


Figure 5: Component Plot in Rotated Space in 2-dimensions

The figure 5 component Plot in rotated Space gives one a visual representation of the loadings plotted in a 2-dimensional space. The plot shows how closely related the items are to each other and to the two components. This plot of the component loadings shows that some factors load highly and positively on the first component and other factors have a loading near zero on the first component, but loads highly on the second.

The Component Plot in rotated Space gives one a visual representation of the loadings plotted in a 2-



dimensional space. The plot shows how closely related the items are to each other and to the two components. This plot of the component loadings shows that (current needs, colour, maintains, and size) all load profoundly and positively on the first component. While (material, lights, and arrangement) loading near zero on the first component, but loads highly on the second.

#### **IV. CONCLUSIONS**

This study aimed at determining the interior design elements of Terengganu traditional Malay houses, there is no doubt that the importance of architecture and its success is as much as it provides for the needs of human beings and securing all spaces that satisfy his requirements and achieve his interest. The concept of housing is more than the presence of a person or a group of people in a group of walls or rooms, but it is much more than it is life, feelings, interaction, growth, and mutual influence, and the more attention gave to interior design of TTMH as much as gave us a rest and a sense of civilization.

Housing is one of the greatest basic wants in the life of man is a machine to live, housing is the place and space inhabited by most of the time the house represents a tool for protection and safety as well as being a manifestation of beauty and independence, which creates an atmosphere of intimacy among family members.

The house includes many different components and components that help the possibility of living inside it; it includes furniture and various luggage, including what is unique for the needs of the day, such as books, for example, which is for night and night use sometimes, such as beds, cabinets, and others. Adequate housing is one of the greatest basic needs of humans if we know that it comes second after providing food and clothing.

The purpose of the house is not only to provide shelter for family members but also to provide an environment that helps individuals to perform their actions at a high level of performance. The quality of the internal environment of the house in terms of

interior design and distribution of furniture elements as well as temperature, lighting, and ventilation, Increases productivity of individuals, expressed in comfort.

Space is defined as the raw material that the designer deals with and is an essential element in interior design. Also, area, in general, has no definition. Once a component is placed within it, we achieve multiple visual relationships between areas as a result of these elements that we are aware of.

In general, the interior design consists of elements that are integrated among themselves and interact to give the model its properties, including the component of activity within a model, whether social or economic. The individual plays an essential role in interior design. In addition, without individual space becomes just a vacuum of life, so all elements are linked to all the features with the individual as a component of the benefit of the parts of the design.

#### **ACKNOWLEDGMENT**

Highly appreciation to Dr Mohd. Hisham in Faculty of Innovative Design and Technology, Universiti Sultan Zainal Abidin (UniSZA) for his support and guidance on the publication on this paper.

#### **REFERENCES**

- [1] K. F. Khairudin, N. H. Salleh, and S. Aripin, "A icQoL2018PerhentianIsland," 2018.
- [2] N. H. Ramli, "Re-adaptation of Malay House Thermal Comfort Design Elements into Modern Building Elements – Case Study of Selangor Traditional Malay House& Low Energy Building in Malaysia," *Iran. J. Energy Environ.*, vol. 3, pp. 19–23, 2012.
- [3] A. Ghaffarianhoseini, U. Berardi, N. D. Dahlan, and A. Ghaffarianhoseini, "The essence of Malay vernacular houses: Analysis of the socio-cultural and environmental values," *Sustain. Cities Soc.*, vol. 13, pp. 157–170, 2014.
- [4] M. H. Hashim, A. M. Z. Ahmad, M. P. A. Latif,

- and M. Y. M. Yunos, "Visual Communication Of The Traditional House In Negeri Sembilan," *Humanit. Soc. Sci. Rev.*, vol. 5, no. 2, pp. 112–123, 2017.
- [5] S. R. Ju, B. M. Kim, and S. I. Ariffin, "Continuation and Transformation of Traditional Elements in Colonial Vernacular Houses in Kampong Bharu, Malaysia," *J. Asian Archit. Build. Eng.*, vol. 14, no. 2, pp. 339–346, 2015.
- [6] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 2014.
- [7] J. W. Creswell, *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*, vol. 4. 2012.
- [8] K. A. Robb, L. Gatting, and J. Wardle, "What impact do questionnaire length and monetary incentives have on mailed health psychology survey response?," pp. 671–685, 2017.
- [9] J. B. Mistry, M. Chughtai, R. K. Elmallah, and S. Le, "What Influences How Patients Rate Their Hospital After Total Hip Arthroplasty ? What Influences How Patients Rate Their Hospital After Total Hip Arthroplasty ?," *J. Arthroplasty*, no. March, pp. 2–6, 2016.
- [10] J. Matejka, M. Glueck, T. Grossman, and G. Fitzmaurice, "The Effect of Visual Appearance on the Performance of Continuous Sliders and Visual Analogue Scales," 2016.
- [11] R. Beaumont, "An introduction to Principal Component Analysis & Factor Analysis Using SPSS 19 and R ( psych package )," no. April, 2012.
- [12] S. Stewart, A. Ivy, and E. V Anslyn, "discriminant analysis in differential sensing routines," 2013.
- [13] A. D. Bank, "1 . Cluster formation , data validation and outlier detection in the International Comparison Program : An application to the Africa region," 2012.