Transformation of traditional houses in the development of sustainable rural tourism, case study of Brayut Tourism Village in Yogyakarta

V R Vitasurya¹,³*, G Hardiman², S R Sari²
¹Doctoral Program of Universitas Diponegoro, Semarang, Indonesia
²Universitas Diponegoro, Semarang, Indonesia
³Architecture Department, Universitas Atma Jaya Yogyakarta, Indonesia

*Corresponding Author: reni792003@yahoo.com

Abstract. This paper aims to reveal local values used by Brayut villagers to maintain the existence of the traditional house as a dwelling. The transformation of traditional houses goes as time passes, influenced by internal aspects related to the needs of residents and external aspects related to the regional development by the government. Traditional Javanese house as a cultural identity of Javanese people, especially in the village, has also experienced the transformation phenomenon. Modernization affects local residents' needs and the Government's Development Program for tourism village influences demands of change. An unfocused transformation can lead to a total change that can eliminate the cultural identity of the rural Java community. The method used is the case study by taking three models of Javanese house in Brayut Village. Brayut Tourism Village is a cultural tourism village that relies on tradition as a tourist attraction. The existence of traditional Javanese house is an important asset for retaining its authenticity as a dwelling. Three models taken as the case studies represent the traditional Javanese house types. The result obtained is that the family bond is a major factor in preserving the traditional Javanese house in Brayut Village, Yogyakarta.

Keywords: family bond, preservation, rural tourism, traditional Javanese house, transformation, tourism village

1. Introduction

The traditional house is a culture which becomes a local identity of a community in a region with a function consistent with its type [1]. Traditional houses are transforming, and the common transformation is of function, following by form as required [2]. Housing transformation not only improves the housing environment but also contributes to cultural development [3]. Traditional communities, especially those living in rural areas, cannot escape the phenomenon of transformation that happens due to pushes of internal factors and pulls of external factors [4], [5].

There are five types of traditional Javanese architecture by the roof shape and design [6], [7], i.e., Tajuk with roof narrowing to one point for worship place; Joglo with two layers of roof narrowing upward for pendopo, the house of nobilities or community leaders [8]; Limasan with widening roof for pendopo, house of merchants or rich people [8]; Kampung with gable roof, house of commoner [8]; and Panggangpe with half-gable roof for non-permanent functions. The transformation of traditional Javanese houses has happened since the 11th century.
Based on the relief on Borobudur Temple, in the beginning, traditional houses had limasan roof and shingle roof tile, then a few types were developed, e.g., Joglo, Kampung, Tajuk, and Panggangpe [9]. Past transformation aimed to accommodate functional needs and self-actualization by adding architectural elements, starting from form, material, ornament, to room proportion [10]. Today, the transformation aims to accommodate changes of functional needs and modernization. Modernization is an external factor triggering the transformation, including the development of a rural area into tourism village. Modern transformation encourages homeowners to make practical decisions based on economic considerations [11], e.g., changing the layout for advanced functions and using modern building materials. Without any clear direction, the transformation of traditional houses can remove the local identity of the traditional community. Unfocused transformation can damage tourism attraction which relies on the natural environment, including architecture as a product of the local culture.

Cultural heritage tourism embraces ecotourism and culture at the same time and emphasizes on the conservation of cultural heritage itself [12]. World Tourism Organization defined sustainable tourism development as an effort to fulfil the present needs of tourists while protecting and promoting opportunities for the future [13].

A study on transformation is required to develop tourism village according to the local wisdom derived from the local ancestors of conserving the environment, including the architecture. A slow transformation in the physical shape of the building and environment can be an indicator of a successful conservation in a region, especially a tourism village. This article aims to explore local wisdom elements in the transformation of Brayut’s traditional houses that protect the original environment and architecture.

2. Research Method
This research employed a case study method focusing on original traditional houses in Brayut Tourism Village. This approach was chosen as a case study can answer the questions of "why and how" [14]. Brayut Tourism Village was selected because it has a unique environment as well as exceptional traditional architecture, both are well-maintained. The data collection technique was participatory action research in the perspective of conservation of traditional architecture in a tourism village.

Participatory action research (PAR) is associated with the community empowerment [15] that is required to maintain the local wisdom. Participatory action research should be supported by other approaches, i.e., observation, in-depth interview, and focus group discussion (FGD) to achieve the study purpose [14].

3. Results and Discussion
Brayut Tourism Village is one of 35 tourism villages in Sleman Regency [16]. The transformation of Brayut from an agricultural region into a tourism village has happened slowly. Based on the joint decision of UNEP and UNWTO [17], sustainable tourism is tourism that takes all of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, as well as host communities.

The community maintains village assets, sense of belonging, and emotional bonds which direct the development of a tradition-based tourism village. In Brayut, the traditional building is the primary tourist attraction. From five typologies of Javanese buildings, three categories are used for dwellings, i.e., Joglo, Limasan, and Kampung [18]. The ancestors of Brayut were landlords, so the dominant house type is Limasan.

Traditional houses are well-maintained since they are used as dwellings and places for activities. The identification to understand the transformation was performed on 14 traditional houses based on the function and shape as responses of transformers in making changes [19]. The transformation category was based on the owner’s reason, the altered form and function, as well as the ownership status (single or multiple) to transform. The identification is shown in Table 1.
Table 1. Categorization of traditional houses in Brayut.

| Identification (Owner) | Existing functions | Transformations | Motivation | Transformer | Category |
|------------------------|--------------------|-----------------|------------|-------------|----------|
|                        | House              | Others          | Forms      | Functions   |          |
|                        |                    |                 | Unchanged  | Changed     |          |
| Joglo 1 Sayadi         | Lodging            |                | X          | X           | Modernization | Single ownership | 1 |
| Joglo 2 Martono        | dwelling           | Homestay        | X          | X           | Modernization, change function | Single ownership | 2 |
| Joglo 3 Sri            | dwelling           | Art performance| X          | X           | Modernization, change function | Single ownership | 2 |
| Limasan Handoiy         | dwelling           | Art performance| X          | X           | Modernization, change function | Single ownership | 2 |
| Limasan Mugiyarto       | dwelling           | Homestay        | X          | X           | Modernization, change function | Single ownership | 2 |
| Limasan Soe-gioprano    | dwelling           | Kindergarten    | X          | X           | Modernization | Single ownership | 1 |
| Sinom Sastro            | dwelling           | Art performance| X          | X           | Modernization, change function | Single ownership | 2 |
| Kampung Darmadi         | dwelling           | Office and shop | X          | X           | Modernization | Single ownership | 1 |
| Sinom Tris              | dwelling           | Homestay        | X          | X           | Modernization, change function | Single ownership | 2 |
| Limasan Sutarmio        | dwelling           | Homestay        | X          | X           | Modernization, inheritance | Multiple ownership | 3 |
| Limasan Sutarmio        | dwelling           | Art performance| X          | X           | Modernization, inheritance | Multiple ownership | 3 |
| Limasan Mujiman         | dwelling           | Homestay        | X          | X           | Modernization, inheritance | Multiple ownership | 3 |
| Limasan Sutarmio        | dwelling           | Lodging         | X          | X           | Modernization, inheritance | Multiple ownership | 3 |
| Limasan Darmadi         | dwelling           | Office          | X          | X           | Modernization, inheritance | Multiple ownership | 3 |

Based on the identification, there are three categories of transformation:

- **Non-dwelling traditional house.** Transformation occurs to accommodate modern functions, such as functional changes from bedroom into bathroom and replacing materials by modern building materials.

- **Dwelling and tourist attraction.** The maintenance is performed by the single heir, so the transformation is to accommodate modern needs, such as functional changes and modern building materials utilization.

- **Communal dwelling house and other functions.** The maintenance is performed by several heirs due to the distribution of inheritance. The house can be divided by the number of heirs. The transformation follows the needs of each heir but the main area, i.e., *pendopo*/porch and *ndalem*, are maintained as the dedication to their parents.

The transformations of three traditional house models were selected to represent the three transformation categories in Brayut Village.

3.1. Joglo 1 – *Non-dwelling traditional house*

Joglo 1 is the oldest building in Brayut, constructed in early 1800 by the first village head, Ki Demang Mertodimedjo. Joglo 1 was built to be a dwelling and office of Brayut government, so the form is a complete Joglo [6], [7]. The transformation in 2005 was changing *sepen* (room for prisoners) into a bathroom. Other parts of Joglo 1 are original and well-maintained, so it received the Decree of
Cultural Heritage Award from the Governor of DIY in 2015 [20]. Joglo 1 then used by tourism village managers as an administrative office and the main attraction as a lodging. The exterior is preserved, and the transformation occurred slowly in the interior. There are not many changes because the heir follows their ancestor’s direction to protect the originality of the house. The building no longer serves as a dwelling. The transformation pattern shows that the external factors, the development of tourism village and implementation of cultural heritage, do not dominate the transformation.

3.2. Joglo 2 – Dwelling and tourism traditional house

Joglo 2 is the house of the second village head of Brayut, Mr. Kartopiyo. When he was the village head, the house was enlarged to be an office. Joglo 2 was built in early 1900. The first stage of transformation happened after the ownership was transferred to his heir, Mr. Martono. Some materials of floor covering were replaced, and a bathroom was added. After the death of Martono, Mrs. Arini (Mr. Martono’s wife) and the family of her daughter lived in Joglo 2.

In this era when the tourism village has developed, Mrs. Arini participated in it by making her house a homestay. The transformation was adding bedrooms in Gandhok (side area of the house). Transformation of function does not necessarily change the building form so that the exterior form can be preserved. Another transformation is replacing building materials.

The single heir assignment becomes the determining factor of the building preservation to follow the parents’ direction. In this model, the tourism and conservation aspects work together. The transformation pattern shows that the influence of the external factor (development of tourism village) and the internal factor (the owner’s will) are balanced. In terms of form, there is not much transformation. Functionally, changes happened in combining dwelling and tourism purposes.

3.3. Mr. Sutarman’s Limasan – Communal dwelling and other functions

Mr. Sutarman’s Limasan is a house whose ownership is divided into three parts, i.e., the front area (pendopo and ndalem) which belongs to Mr. Sutarman (the oldest child), the back area that belongs to Mrs. Kisyantini, and the side area which belongs to Mr. Djoko Santoso. The division was made by the previous owner, Mr. Pawirodarsono. The house was built at the end of 1800 by Mbah Bayan (Mr. Pawirodarsono’s parent).

His position as “Bayan”, a village officials in 1890 – 1900 era, made the house a part of the upper-middle-class category. Limasan form was selected because the owner was not allowed to build a Joglo (for village leaders) [8]. There were two stages of transformations. The first happened during the distribution of inheritance in around 1990. Mr. Sutarman was ordered to maintain the main building to be as the original. Mrs. Kisyantini built a modern house at the back and Mr. Djoko Santoso at the side. In the era of tourism village development, Mr. Djoko Santoso built bedrooms for tourists.

The Old Pendopo becomes an attraction for tourists. All heirs live in Mr. Sutarman’s Limasan house which is integrated with his siblings’ houses. The division is to maintain the harmony of the family so that their future generations can still experience the traditional atmosphere. The efforts to follow the ancestor’s direction preserve the building.

The transformation combines modern elements in the form and function of dwelling and lodging, with traditional elements of the original main house. The transformation pattern shows that the influence of the external factor (development of tourism village) is smaller than the internal factor (owner’s needs). Functionally, transformation occurs in the combination of dwelling and tourism function, so most of the form is still original. The schematic description of the transformations is shown in Table 2.
Table 2. Comparison of transformation patterns of traditional houses in Brayut.

| Layout transformation | Change and Unchanged Architectural Elements | Factors | Transformation Pattern |
|-----------------------|---------------------------------------------|---------|-----------------------|
| ![Diagram 1](image1.png) | ![Diagram 1a](image2.png) | **Internal:** requirement to follow the ancestor’s direction  
**External:** as tourism village and cultural heritage | ![Diagram 1b](image3.png) |
| ![Diagram 2](image4.png) | ![Diagram 2a](image5.png) | **Internal:** the need for a place to live and to follow ancestor’s direction  
**External:** as tourism village | ![Diagram 2b](image6.png) |
| ![Diagram 3](image7.png) | ![Diagram 3a](image8.png) | **Internal:** the need for a place to live, work, and to follow ancestor’s direction  
**External:** as tourism village | ![Diagram 3b](image9.png) |

4. Conclusion
The transformations of traditional houses in Brayut is partial, implying that the form is maintained as a whole, but the function changes. The transformations are slow, meaning that the wholeness of form and originality of the main function is preserved as a dwelling. The external factors of the development of tourism village and the establishment of cultural heritage do not influence the transformations.

Meanwhile, the internal factor of the owner’s need which related to the number of heirs influences the transformation. Factors affecting transformation are the family agreement and bond. The transformation is bigger when there is a house/plot division policy and becomes smaller when the house is handed to a single heir.

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References

[1] Rapoport A, House, Form and Culture, Prentice Hall Inc., London, 1969.
[2] Sueca N P. 2004. Home Transformation: Its Prospects for Improving the Home in Indonesia (A Preliminary Study). *Jurnal Natah*. 2(1):10 - 16.
[3] Sueca N P. Housing transformation: improving environment and developing culture in Bali. University of Newcastle upon Tyne – Dissertation, 2003.
[4] Antoniades A, Poetics of Architecture, Van Nostrand Reinhold, New York, 1990.
[5] Najoan S & Mandey J. 2011. Transformation As A Design Strategy. *Media Matrasain*. 8(2): 117 - 130.
[6] Dakung S, Traditional Architecture of Yogyakarta Special Region, Yogyakarta, 1982.
[7] Ismunandar R, Joglo Javanese Traditional House Architecture (3 ed.), Dahara Prize, Semarang, 1990.
[8] Raffles T S, *The History Of Java*, Narasi, Yogyakarta, 2008.
[9] Prie M M, *Pancaran Limasan - The Brilliance of Limasan*, Red & White Publishing - Tembi Rumah Budaya, Yogyakarta, 2016.
[10] Ronal A, Man and House of Java, Gadjah Mada Press, Yogyakarta, 1988.
[11] Vitasurya V R, & Pudianti A, The Influence of Traditional Culinary Industry in the Development of Tourism in Lopati Village, Yogyakarta. *Proceedings Promoting Cultural and Heritage Tourism*, Universitas Udayana, Denpasar, Bali, 2016, p. 280-287.
[12] Pederson A, Managing Tourism at World Heritage Sites:a Practical Manual for World Heritage Site Managers, UNESCO World Heritage Center, Paris, 2002.
[13] WTO, Global Code of Ethic for Tourism, WTO, Santiago, Chile, 1999.
[14] Yin R K, Case Study Research - Design and Method (3th ed.), Sage Publisher, California, 2003.
[15] Mikkelsen, B., Metode Penelitian Partisipatoris dan Upaya - upaya Pemberdayaan (terjemahan) 2nd Ed., Yayasan Obor Indonesia, Jakarta, 2001.
[16] Fauzy A, & Putra A. 2015. Mapping of Potential Tourism Village in Sleman Regency 2015. *Jurnal Inovasi dan Kewirausahaan*. 124-129.
[17] UNEP-UNWTO, Making Tourism More Sustainable - A Guide for Policy Makers, 2005.
[18] Kartono J L. 2005. The Concept of Traditional Javanese Space in Cultural Context. *Dimensi Interior*. 3(2):124 - 136.
[19] Khan T H, Spontaneous Transformation as an Integral Phenomenon of Inhabitation in Living with Transformation, Springer International Publishing, 2005, p. 21-33.
[20] Laboratorium PPLK-UAJY, Architecture of Brayut VillageI, Graha Ilmu, Yogyakarta, 2016.