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**Submission date:** 08-Jan-2023 08:49AM (UTC+0700)

**Submission ID:** 1989620338

**File name:** Amri\_2020\_IOP\_Conf.\_Ser.\_Earth\_Environ.\_Sci..pdf (995.47K)

**Word count:** 2991

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To cite this article: N Amri *et al* 2020 *IOP Conf. Ser.: Earth Environ. Sci.* **419** 012009

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## The role of *the Titian* path as accessibility in the marginal housing on the water at Kampung Karabba and Marbor, Buloa-Tallo

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**Abstract.** Start Street is an important means of transportation in a residential neighbourhood. Housing built on aquatic environment generally uses of transportation in the form of a wooden bridge that serves as a street by the local community called Titian/Tete. Titian in kampung Karabba and Marbor Tallo district has a poor condition as street access. From its size, material and social role, the existing titian is less able to accommodate its role as a means of transportation. The objective of the study is to explore the local street facilities in various aspects, namely the role of the titian in the social life of the community and humanistic aspect. This research method uses a qualitative exploratory research method field (A Qualitative Exploratory Research) based on field data exploration (field observation). The result is that from the aspect of the size dimension of the titian does not qualify as a path, from the very material range to the climate and unsafe, from the socialistic aspects of the cattle, can play a role as the control of village security as well as the increasing social interaction of the community.

### 1. Introduction

The Limited land and high land prices in downtown cause many lower-class people choose to live close to the workplace. These community groups are currently inhabiting areas that should not be for dwelling/settlement such as riverbanks or water bodies. One of them is housing located in district Tallo, sub-district Buloa known by the name of Karabba and Marbor kampong. Both kampung generally built on the water body or aquatic environment. Access in the kampung using a path called Titian (local tete). Titian is a small bridge (a log, aboard, and so on that is lined up over a river and so on), a narrow path (especially on board, stone, etc.).

Accessibility is a very vital supporting tool of its presence in a residential environment. The presence of such means is a link that will facilitate the achievement from one place to another. In the settlements of Karabba and Marbor, Buloa sub-district, located on water bodies, such facilities are roads of paving, wooden bridges, and bamboo. Special wooden bridges and bamboo by local people called *tete* or titian. The Titian stretches from the mainland to the houses that lie out into the sea. The width of the titian is very limited, from 1.5m - 0.5m, whereas every day it is traversed by motor vehicles because the owner houses are located on the left and right of the titian owning the motor as their transport. Aside from being a means of road transportation, the Titian is also used for various activities such as playing, bathing/washing, and socialising by the residents. The problem is the multi-functional of titian looks less able to accommodate the activities of residents, as well when viewed



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from various aspects such as the humanistic aspects of security, the comfort of road users and social aspects of society who live in housing [1, 2]. The purpose of this research is to explore the local road facilities (titan) in various aspects, namely the role of the foot in the social life of society, the path of the humanistic aspects.

## 2. Methodology

The research method uses a qualitative exploratory research method field (field based on field observation) through a survey, interview and identification of the potency of water edge area become research case. The data is collected through literature review and field observation on the physical aspects of the artificial environment that support the activity of residents of housing above water. Furthermore, the data are analysed by linking to the standard of road size and the movement of people and vehicles passing on it, components, road equipment, road materials, and social life of the surrounding communities related to road functions [1, 2].

The study takes place on the informal settlement area of the Karabba and Marbor coastal Housing sub-district of Buloa, District of Tallo.



**Figure 1.** Study location. Kampung of Karabba and Marbor (District Tallo, sub-district Buloa) The yellow colour is the mainland area with concrete roads, while the other is the shallow water area affected by tidal seawater.

Housing began to be established in 1982, has been evicted several times by the government because it is wild and was created on public land and has even expanded into water bodies [2, 3]. Housing does not have a certificate, especially those in bodies of water [3, 4]. Currently, the government has promised residents to produce 93 house certificates, including mosque facilities in Kampung Karabba.

## 3. Results

### 3.1. The shape and size of the road

The shape of the path is generally straight along the main street in Karabba kampung, while the Marbor kampung has several branches. The size of the path of the titan is varied, for wooden landing starting from 1.5 m-50 cm. Being for bamboo road width 50-60 cm [1, 2]. The paving road which is the connector/collector of the environmental road to the housing road width 1.2 m.

The shape of the path is generally straight along the main street in Karabba kampung, while the Marbor kampung has several branches. The size of the path of the titan is varied, for wooden landing starting from 1.5 m-50 cm and being for bamboo road width 50-60 cm. The paving road which is the connector/collector of the environmental road to the housing road width 1.2 m [1, 2].



**Figure 2.** Street dimension in Karabba and Marbor kampong.



**Figure 3.** Marbor Titian is wider (1.5 m) and has branches/intersections.

### 3.2. Street material in a residential aquatic environment

Concrete roads, Titian of wooden and bamboo serve as a major of accessibility in a residential aquatic environment [4]. For concrete street only found in alley 1, and 2 with Length of about 10-15 m which then continued with the wooden bridge (titian) [5, 6, 7]. Titian bamboo is only intended to connect between family members' homes or as shortcuts between wooden bridges. The wood used for the titian is not of the first-class wood that is waterproof, but the wood is used in grade 2 or 3, even the floor material is much from the *albasiah/sengon* wood (used vegetable or fruit storage box), so it is very easy to rot [5, 6, 7].

The railing used as a handle on the wooden pavement lies only in alley 3 using a bamboo tree with a height of 70 m from the bridge floor. Bamboo titian only use the rope as a handle for user safety.

### 3.3. Road function in a residential environment

In a residential environment, especially on the water, the street has many functions other than its main function as access/link from one place to another, but in the housing can be seen various activities or activities on the road body

The path of the bridge as a boat dock, which is also used to raise and lower seafood from the boat. Titian also serve as pedestrian circulation and motor vehicles.



**Figure 4.** The function of Titian as pedestrian and play for children.



**Figure 5.** Functions of the titian as a motorcycle parking and social and economic interaction.



**Figure 6.** The function of the titian as clothes and fish clothesline.



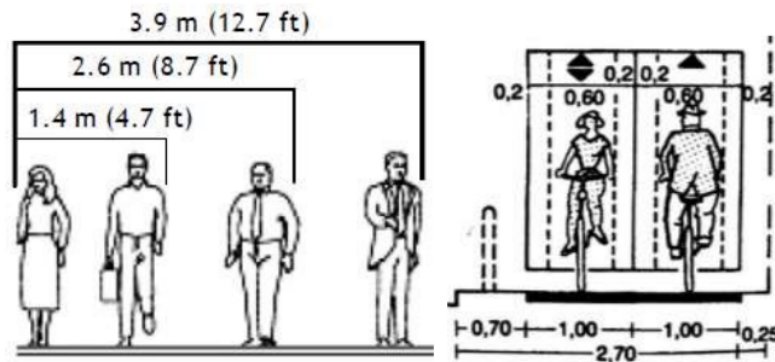
**Figure 7.** The function of the titian as a place to wash and bathe the child.

#### 4. Discussions

##### 4.1. The Titian class in the study area

The study in kampung Karabba and Marbor is a titian/path over water that is closer to a bridge between houses. Based on the classification of residential neighbourhood streets, it includes local secondary streets for the titian. With the stipulation of streets width 2.00 m, width hardening 1.2 m, street shoulders 0.25 m. On one of the sections of the titian located in Marbor kampung the size of the bridge reaches 1.5 m [8]. Nevertheless, other elements have not met critics as paths.

As a functional avenue to accommodate pedestrians and two-wheeled vehicles (motorcycles and bicycles) then based on the standard of Data Neuvert, the minimum street width size that can be used for cyclists in 2 safe directions is 2.7 m. If the road is only for pedestrians, then the minimum required road width is 1.4 m [5, 6, 7]. It can be seen in the picture below:



**Figure 8.** The standard size of road width that accommodates pedestrians and users of 2-wheeled vehicles.

##### 4.2. The titian of the bridge as a public space of social and humanistic aspects

Titian as a road that connects the units of houses to the road that leads to the centre of the village / sub-district must, of course, fulfil its main function as a transportation network. The main purpose of road network procurement is to facilitate a location to be connected to other locations with moving means of transport on it. In other words, a measure of convenience and convenience regarding spatial plots of land can interact with each other [5].

From the aspect of humanity. Humanism is attributed to a style of the philosophical view that puts a man in a special place and makes it all things. Humanism is an approach in study, philosophy, or practice that focuses on human values and concerns. <sup>7</sup> residential areas/housing required support facilities, one of which is the road infrastructure. Road infrastructure has a positive role in economic growth. Infrastructure existing roads in Karabba and Marbor village housing is a bridge (skyway) [2]. The path of the bridge in a housing environment above the water of Marbor and Karabba is not able to accommodate the humanity aspect. The humanist side of road users, such as the sense of security, comfort, in using the road, also covers or cultural values adopted by the community. For example, the size of the road width where road users can freely use it without any obstacles. When referring to the road concept in Project for Public Space (PPS), an independent organisation engaged in the field of Public Space development has the criteria of a Great Street, as follows:

- Access and Linkage that includes the convenience to cross the road, the choice of transportation, as well as the convenience for pedestrians on the sidewalk.

- Uses and Activities. These criteria include variations in functions such as restaurants, shops, services 3 — comfort and Image related to local identity and culture, good street furniture, trees and other amenities.
- Sociability Related to the existence of children and parents on the road, as well as a sense of pride and possession by people who gather.

Based on the requirements as a greet street, the road in the neighbourhood of RW2, RT 5 less can be categorised as greet street, because it does not meet the elements to 1 and 3, namely access and linkage, comfort and image. Using the road for motorists is difficult when crossed because of the narrow road width that can only be passed by a motor vehicle if the scoot/meet one of the motors will succumb and stop at places that functioned as a private parking place residents or on the footbridge leading to the housing unit. Besides, there is no railing/fence as a safety for both pedestrians and vehicles, so that for fear the user will fall. Other problems of the physical condition of the wooden cistem that generally have weathered by age, and there is no street furniture such as trees, handrails, streetlights, and so on.

Here is a figure of the titian that has undergone the development into a concrete bridge in the settlement on the water Bajoe bone district, and housing on the water in Pontianak. Titian has been developed into a wider concrete road/bridge that can be traversed by cars and motor vehicles, connecting residential areas with urban centres, in addition to improving the circulation of human beings as well as the circulation of goods and services. Use of reiling on both sides of the catwalk for the security of the user of the titian



**Figure 9.** Motorcycles and bicycles using the titian.



**Figure 10.** Development of titian in Kampung Bajo. Bone-Sul-Sel.



**Figure 10.** Kampung Beting Pontianak.

Titian in Kampung Beting Pontianak has been developed, so it is stronger and not easily decayed as before. The size though not according to the standard size of the path (2m) but has been traversed by two-wheeled vehicles from the opposite direction. The caution of road users is still needed because there is no railing on the path of the bridge.

The diversity of street functions within the settlement environment is not unusual for people in Southeast Asia Region [5]. Street in Asia continue to evolve as distinct paths from the West, a path that reflects the unique Asian culture [5, 7]. Malaysia applies the multidimensional principle, i.e., multifunctional street, multiclass, multi-religion, and multi-race. The multifunctional street is the street use of various activities as a market, the place of organising the festival, and the daily activities of the society in Malaysia [5, 7].

Another social aspect that emerges from the presence of the titian is the safety of the environment. On the night of the titian be a tool of control/detection of security, according to Mr Kadir (residents of Marbor kampung) at night, when someone walks on the titian it will be heard the sound of his or her steps, so if there is intangible intent then quickly detection by citizens.

From the socio-cultural aspect, the existence of the titian opens the horizon of society that can become a vehicle for social change, build tolerance, and melt the cultural barrier. It is related to the function of the street network as a facilitator of the operationalisation of transportation services, thereby increasing the mobility of the community and to increasing public access to various locations of social facilities and services [9, 10, 11].

## 5. Conclusion

Tititan as a transportation facility in the water settlement does not qualify as a great street or humanistic aspect in terms of security, and the convenience of road users. But from the social aspect of its presence into a glue vehicle between groups of society/family, making housing more secure from the criminal aspects.

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