Investigation “Tiny House” in urban *kampung*: sustainable living or responding to scarcity?

Inka Anggraeni¹ and Herlily¹

¹Department of Architecture, Faculty of Engineering, Universitas Indonesia

Email: anggraeni.inka@gmail.com, herlily@gmail.com

Abstract. Competition on land use for settlements and offices or business areas in big cities in Indonesia, an especially metropolitan city such as Jakarta, have resulted in high land prices. This competition is a result of shifting settlements away from the city centre and people having to commute to the city centre every day to go to their workplaces. This problem occurs not only in developing countries but also in many developed countries. Tiny House Movement later emerged in developed countries and has been considered as one solution to deal with this problem. Living in a tiny house does not only mean living in a small-sized house, but also adapting to a simpler life, becoming less consumptive, being more connected to nature and caring for the environment. Living in a tiny house is not something new to Indonesian society. For people who live in the urban *kampung*, their place of living can also be considered as tiny houses, albeit having a different appearance to the ones in developed countries. This is what distinguishes between the understanding of tiny house between developed countries and Indonesia. This paper will discuss whether a tiny house is suitable to be applied in the lives of urban communities in Indonesia and whether tiny houses can be said as sustainable living. This research will use both qualitative methods (through interviews with urban *kampung* communities) and quantitative methods (measurements of tiny houses in urban *kampung*) to retrieve information. Through this research, it was found that urban *kampung* residents have applied the tiny living principle in their lives.

1. Introduction

Along with the development of technology and science, people assume that having a decent life equals living in a large house with complete facilities and having a large area of land. This mindset, inevitably, followed by human settlement problem, namely limited land for housings. As a result, land price, especially in urban areas, is rising. The option of buying a more affordable house in a distant suburb area presents other issues, which are related to the distance and travel time to the city center. The limited public transportation options that are both affordable and reliable may force people to use private vehicles, which unavoidably will affect the overall traffic volume. Such condition will, in turn, affect both travel time and travel cost. These matters, in addition to the high urbanization rates in many major cities in Indonesia, create an increasing number of slum areas.

The issue of increasing land price exists in almost every country around the world, including the developed countries (such as European countries and the USA). Based on the US Census Bureau analysis on housing, the average size of a single-family house in 1973 was approximately 1,660 square feet (sq. ft.) or about 154 square meters. In 2015, the average size had increased to 2,598 square feet (sq. ft.) or about 241 square meters. In other words, there had been an increase of around 1000 sq. Ft. (64%) Within 42 years [1]. To face this problem, one measure that has been taken by the people is to commute to the city centre every day to go to their workplaces. This competition is a result of shifting settlements away from the city centre and people having to commute to the city centre every day to go to their workplaces. This problem occurs not only in developing countries but also in many developed countries. Tiny House Movement later emerged in developed countries and has been considered as one solution to deal with this problem. Living in a tiny house does not only mean living in a small-sized house, but also adapting to a simpler life, becoming less consumptive, being more connected to nature and caring for the environment. Living in a tiny house is not something new to Indonesian society. For people who live in the urban *kampung*, their place of living can also be considered as tiny houses, albeit having a different appearance to the ones in developed countries. This is what distinguishes between the understanding of tiny house between developed countries and Indonesia. This paper will discuss whether a tiny house is suitable to be applied in the lives of urban communities in Indonesia and whether tiny houses can be said as sustainable living. This research will use both qualitative methods (through interviews with urban *kampung* communities) and quantitative methods (measurements of tiny houses in urban *kampung*) to retrieve information. Through this research, it was found that urban *kampung* residents have applied the tiny living principle in their lives.
houses have been proven to have a smaller impact on the environment compared to big, conventional houses. In terms of slum area conditions in Indonesia, the term ‘tiny house’ can also be applied to the dwellings built in such an area. Nevertheless, the definition applied to such term will be different in Indonesia and the developed countries.

Mitchell [3] suggests that in developed countries, the use of tiny houses for a place of living starts with the concept of “less is more.” About housing, this means that it is not necessary for a place of living to be big, as long as it is sufficient to meet the essential needs of the residents. The limited number of rooms in a tiny house is deemed positive and able to control the consumptive behavior of its residents. Becker [4] argues that owning only a handful of possessions can make someone have a more meaningful life. Living in a tiny house will also enable someone to have a house in the city center with a relatively lower budget since it requires a smaller area of land. It also enables the residents to have their garden, better social life with their neighbors, pets, and many other things which might be almost impossible to have if they choose to live in a vertical house, such as an apartment. Becker [4] also explains that designing a tiny house does not equal to dismissing the aesthetic elements. Instead, it is essential for a tiny house to have a very minimalistic design with a compact function. Neatness, user-friendliness, and comfortability are the keys to design a tiny house.

In Indonesia, on the other hand, people who live in tiny houses are those who have no other option due to the low purchasing power and economic condition. This circumstance, in turn, makes the tiny houses in Indonesia to have a very basic, modest, and unruly design. Rahayu [5] suggests that urbanization has been impacting various aspects in urban areas, including the decline of environmental carrying capacity. Rahayu [5] further argues that some people who move to urban area do not have any fixed destination, so they tend to occupy areas that are not well-developed, and eventually makes the city seems dilapidated. Many Indonesians still hold the view that to have a decent life, one has to live in a big house with a large land area. Such a view encourages them to purchase a house located in the outskirt areas, and it forces them to commute to their workplace on a daily basis. In addition to wasting more times, this condition also increases transportation expenses. Meanwhile, those who move to and get employed in urban areas will try their best to live near to their workplace. Eventually, this condition promotes the growth of slum areas within the capital city of Jakarta.

This study aims to investigate whether the tiny houses in Indonesian urban kampung applied the sustainable living concept. The study will observe how urban kampung community live their daily lives and how they adapt to the lack of housing supply condition. This study is expected to serve as evidence of how tiny houses in urban kampung have reflected the concept of sustainable living and can be used as an alternative to solve the settlement issues in urban areas.

2. Method
This study is held at Kampung Muka, Jakarta. The information for this study is acquired by applying both quantitative and qualitative methods. The data used in the study comprises primary and secondary data. Primary data is obtained from surveys, interviews, and direct field observation. Also, the precedents of the already built-tiny houses are also used as a primary data source. Meanwhile, the secondary data is collected from literature research of various books, journals, articles, and websites.

Field surveys are aimed to generate both qualitative and quantitative data. Qualitative data is obtained from observations on tiny houses in Indonesia through direct interviews with urban kampung residents living in the tiny houses. Quantitative data, on the other hand, is acquired by measuring the size of their dwellings. This data will be used to find the visible pattern that will be compared with the tiny houses in other countries. Finally, it will be used to conclude on the type of tiny house needed by Indonesians and whether such a concept is appropriate to be adapted in Indonesia.

3. Results and discussions

3.1. A tiny house as settlement
A tiny house is also known by various other names, including compact house, small house, and micro house. There is no specific size for a house to be categorized as a tiny house. However, The Tiny Live Blog states that a tiny house is typically 100 – 400 square feet (sq. ft.) in size, or around 9 – 36 square meters, covering a bedroom, a kitchen, a living room, and a bathroom [1]. Designing a tiny house is not a simple process since each space matters and has to be utilized efficiently. Susanka [6] explains that keeping an eye on the details that can bring up aesthetic value and sense of comfortability to the resident is essential in the process of designing a tiny house.

Some principles that are typically kept in mind in designing a tiny house are called the subtractive design [3].

1. Use vertical space
   Maximizing the use of vertical space. Everything above 2 meters will become a dead space if not utilized. Vertical space can be utilized as storage so that it can reduce used space.
2. A place for everything and everything in its place
   For a resident of a tiny house, everything has its specific storage place. Without this principle, it is easy for the house to be overcrowded by items. Important and essential items have great values which justifies their needs for specific storage place.
3. Double-duty items
   The use of an item is optimized to have more than one function, and so is the use of space.
4. Most use items deserve easy access
   To make it easier to search for a certain item, items are arranged based on how often the items are used.
5. Built-ins with purpose
   Built-ins are very useful in a tiny house since they reduce the use of space while still providing important facilities such as tables, sofas, chairs, until beds. The use of built-ins is not only to create hidden furniture but also to store hobby items, such as fishing equipment, guitar, bikes, etc.
6. Less is more
   Reduce organize and arrange the items inside the house. Use the items as a tool to support daily lives, instead of dependency on life.

As explained above, the choice of living in a tiny house in developed countries is not entirely caused by the high price of land in city areas. People nowadays have begun to realize that owning a house with a bigger building footprint does not only require high maintenance cost and time but also has a bigger impact on the environment [2]. Tiny houses residents have realized that their lifestyle will reduce the negative impact on the environment. Considering the condition in many developed countries, living in a tiny house becomes an option that is encouraged by awareness for a more sustainable lifestyle (both for themselves and their environment). Upon deciding to live in a tiny house, the residents will adapt to life in a small house with limited space so that they need to get used to a simple lifestyle, or “tiny living.” Since living in a tiny house is more of an option rather than a forced condition due to an economic issue, tiny houses in developed countries are built with a good, well-organized design.

Looking back to the condition in the urban *kampung*, the houses in the area can also be considered as tiny houses. But then there is a difference between the precedent and the tiny houses in the urban *kampung*. According to Rahayu [8], there is a tendency for people who move for urbanization to occupy areas that are not well-developed since they did not have any fixed destination when they moved to the city. This eventually makes the city to look dilapidated. Living in a tiny house in urban *kampung* does not constitute a lifestyle choice, but a compulsion caused by the low purchasing power and economy condition. The result is a modest, simplistic, and unruly design. As a comparison between the precedent and the case study, seven variables of tiny house characteristics are listed in Table 1.
Table 1. Comparison between precedent and the case study.

|                      | PRECEDENT | CASE STUDY |
|----------------------|-----------|------------|
| Use vertical space   | ✔️        | ✔️         |
| Double duty room     | ✔️        | ✔️         |
| Sustainable living   | ✔️        | ✔️         |
| Less is more         | ✔️        | ✔️         |
| Built-in             | ✔️        | ✔️         |
| Interior views       | 🟦         | ✔️         |
| Near Workplace       | ✔️        | ✔️         |

From Table 1, similarities can be drawn from the comparison between the precedent tiny houses and the respondents’ houses. There are double-duty rooms in all the houses as a result of the limited space, which makes it impossible to do different activities in different rooms. It can be seen in Figure 1a that Steve’s house from the precedent utilizes the living room as a bedroom. A similar condition is found in Darsono’s house (Figure 1b) and Mak Keong’s house (Figure 1c), with the difference in the arrangement of the available space. In Steve’s house, we can see a built-in system on the bed located below the kitchen platform, which can convert the bed to a sofa to save some space when it is not used. On the other hand, a foldable bed is spread out in the respondents’ houses, which makes the houses seem untidy.
Figure 1. Application of multifunction system in tiny houses.

Figure 2. Multifunctional rooms.

Figure 3. Items needed.
Table 1 also shows that both the precedent and the case study fulfilled the variables “less is more” and “sustainable living.” The meaning of these two variables, however, is different in the precedent and the case study. The residents of tiny houses in the precedents choose to live in a small house to control their consumptive behavior and to shift into a simpler lifestyle. To be able to do this, they have to reduce the number of possessions they do not need by the principle “owning less creates an opportunity to live more” [4]. Meanwhile, instead of their deliberate choice, the respondents in the case study have to live in tiny houses since it is the only option they can afford. The limited space available forces them to only buy items which are necessary to be kept at home. Figure 3 shows the percentage of items usage by the respondents. The percentage figures for fans, televisions, wardrobes, and beds reach 100%, which shows that the four items are deemed essential by the respondents. The next items needed by the respondents are refrigerators and cooking utensils with the percentage figure of 65%. Not all respondents consider these two items necessary since some of them do not have any kitchen in their small houses. Meanwhile, air conditionings and computers are seen as peripheral items outside the primary needs.

The precedent and the case study also share some similarities in the “sustainable living” variable. However, there are some differences in the definition of the terms used in the precedent and the case study. In the former, it refers to the use of materials with a more positive impact on the environment to prolong the duration of stay of the resident. In the latter, sustainable living can be defined as living at Kampung Muka with the existing bonds and kinships, which makes the respondents content to live in the area for a long duration of time.

Figure 4 shows that 47% of respondents agree that the aspect of kinship greatly affects the bonds to the area of Kampung Muka itself. The strong kinship in the area makes the discomforts caused by the basic condition of their small houses, which not only lack of space but also access to clean water, sanitation, and public service, become tolerable for the respondents. The close-knit bond within the community of urban kampung can overcome any shortage they faced in each of their own tiny houses. Such a bond eventually contributes to the establishment of sustainable living among the urban kampung community.

The built-in system also becomes an important consideration for reducing the use of space in a tiny house. Table 1 shows that this particular aspect is still lacking in tiny Indonesian houses. Out of nine houses in the case study, there is none that applies the built-in system. This may be due to lack of awareness towards the design and sufficient knowledge on such a system. Nonetheless, this system can be very helpful in the management of spatial use in tiny houses. For example, an item with a built-in system, such as the one found in Steve’s house, can be modified in such a way to add more space for other activities while not being in use.
3.2. Prospect of tiny houses in Indonesia

During the survey held for this study, the respondents were introduced to the terms “tiny house” and “tiny house movement,” which have been popular in many countries. After introducing the terms and displaying some examples of tiny houses, the study set to find out the opinions of each respondent. Nine families showed a positive attitude towards the movement, but only four of the nine expressed their opinions and views about the issue, as can be seen in Table 2.

Table 2. Opinion towards tiny house.

| FAMILY           | Opinion                                                                 |
|-----------------|------------------------------------------------------------------------|
| DARSONO FAMILY  | Good, it can become one solution to the slum area in Indonesia, especially in Jakarta. |
| THOFAN FAMILY   | I am very positive about this tiny house movement. It is very applicable in Indonesia as long as we have the patience to start it since changes will require a long process. |
| SOEKARNO FAMILY | Neutral                                                                |
| DIANA FAMILY    | It is unique. Every space becomes useful and tidy.                     |
| ERNI FAMILY     | Neutral                                                                |
| YANI FAMILY     | Neutral                                                                |
| KUSIAH FAMILY   | It is nice, unique, and comfortable to live in a tiny house since it can make an efficient placement of only the items that are needed. |
| REMI FAMILY     | Neutral                                                                |
| MAK KEONG FAMILY| Neutral                                                                |

The opinion from Darsono family in Table 2, which states that tiny houses can be a solution to the slum issue in Jakarta, can be used as a strong argument to support the creation of tiny house trend in the urban kampung, particularly in Jakarta. This argument is then supported by the opinion from Thofan family, which suggests that for this trend to be widespread in urban kampung, it will require a long process that will take a long period. Therefore, patience is essential.
Figure 5. Opinion about the trend of the tiny house in urban *kampung*.

Figure 4 shows that 57% of the respondents agree that the movement can become a trend in Indonesia. They believe that tiny houses will not only useful for tackling the issue of settlement in Indonesia but also to overcome the traffic problem in the country, particularly in the capital city of Jakarta. By living in smaller houses, people can stay in an area close to their workplace, which means that it is no longer necessary to use private vehicles to commute, which in turn will reduce the traffic volume in Jakarta. The respondents admit that they are currently living illegally on land they do not own, which makes the house they are living in to be semi-permanent. Nevertheless, they believe that it is small people like themselves who have resilience towards the changing times. Therefore, the term “sustainable” can be applied for the context expressed in such a statement. For these people, living in a community with a close-knit kinship has granted them an unbreakable bond with other members of the community. This condition makes the community of Kampung Muka be a good example of a sustainable community.

4. Conclusion

Living in a tiny house is not a new thing for those who live in Indonesian urban *kampung*. Based on the analysis, upon observing the lifestyle of the respondents, it is found that “living tiny” lifestyle has already been adopted by the community. The respondents show the ability to limit their purchase of goods to adjust to the limited space of their houses. This shows that consumptive nature does not affect the life of the people in this area. In addition to being free from consumptive nature, their modest lifestyle reflects their high tolerance towards discomfort. The respondents state that their decision to stay at Kampung Muka is largely affected by their comfort level towards the social life among the community members. This shows that sustainable living established in urban *kampung* is not only affected by the existence of its tiny houses, which have a more positive impact towards the environment, but also the support of the community that raises the comfort level of the community members.

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