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Characteristics of the Spatial Structure of Kosts Private Rental Housing: A Case Study of the Urban Settlement of Jakarta, Indonesia

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Abstract

This paper investigates *kost*s, private rental housing facilities spontaneously developed by house owners mostly due to changes in their stages of life, the need for additional income, and the demand for cheaper housing for people who reside far from their place of employment and education. The arrangements vary considerably, making kosts popular housing options. Currently there are no specific design standards for kosts. Their design and operation are based on the owners' preferences. This research was based in Indonesia's capital, Jakarta, which is the center of business and has the greatest degree of urbanization. The high housing prices there, combined with relatively low incomes makes it difficult for middle-to-low income earners to afford houses.

Focusing on space planning by owners, this paper discusses various patterns of spatial arrangement in kosts and the impact on the living space of residents. The data collected was analyzed by classification and quantitative descriptive analysis methods. The spatial organization and lack of space trigger behavioral changes and the misuse of space. Furthermore, many kosts are not up to the Indonesian standards of a healthy home. The formation of specific design standards is important to improve the physical conditions of kosts and their sense of community.

Keywords: kost; private rental housing; spatial structure; spontaneous settlement; planning consideration

1. Introduction

1.1 Purpose

This study aims to understand the various patterns of spatial arrangement in *kost*s, private rental housing developed with various conditions and setups, and to address the impacts on the residents' living space focusing on kost space which was planned by owners. Furthermore, the research observes the appropriateness of considering a kost as a healthy home.

1.2 Background

The residential neighborhood is one of the main factors that directly influence the social environmental aspects in community development (Roseland, 1998 as cited by Said and Yuliastuti, 2013). Housing environment problems may affect the residential neighborhood and the city environment. In addition, residents must be satisfied with their surroundings before they can develop cohesiveness in the community (Zaff and Devlin, 1998).

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Proper adequate housing is still a big issue in the world today, especially in developing countries including Indonesia. The 2010 National Socio-economic Survey mentioned that Indonesia was one of the countries with the highest relative minimum wage in the world with the percentage reaching around 65% of the average wage of salaried workers (OECD, 2010). On the other hand, the dense population of Jakarta, partly due to urbanization, leads to high housing prices. These factors lead to the condition in which middle-to-low income earners have difficulty in buying houses (Baker, 2012).

However, the urban settlement development in Jakarta which occurs spontaneously (Hudalah and Firman, 2010) is continuously growing and adapting to social conditions and demands, providing affordable living spaces for a wide range of residents. Kosts, a type of private rental housing, are one of the spontaneous housing options developed by residents.

As a cheaper rental alternative with flexible contract periods, the demands for kosts are notably high, making kosts not only an attractive housing option but also a potential investment. However, most kosts are not registered although they are profit-oriented and highly sought after. The current regulations applied to kost design and operation might not be regulated to the

utmost extent, resulting in many kosts being unnoticed by the government or having low quality living conditions.

During a personal interview about tax regulations in relation to kost business in Jakarta on January 18, 2013, Mr. Arief Susilo as Head of the Local Tax Regulation and Socialization Department of Jakarta Tax Services Agency explained that the discussion about kosts and their regulation arose when the question of whether kosts are subject to taxes was raised. This is because tax objects are not taxed only by their revenue potential but also as to whether they are fit to be taxed. Kosts are also taxed to control the nature of the facilities, since they might be housing crime nests, e.g. drugs and terrorism, in disguise.

At the moment, kosts in Jakarta are subject to hotel and restaurant tax under the Law of Republic of Indonesia No.28 Year 2009 and Regional Regulation of Jakarta Province No.11 Year 2010.

1.3 Previous Studies

Even though the topic of kosts has not been widely studied, and there are not a lot of publications focusing on kosts, studies regarding them are indeed important because of their potential to impact the lives of a great number of people living in and around them.

In a research article by Nurdini and Harun (2011), the combination of two spatial valuations, i.e. actual and perceptual approaches, were described. They tried to identify the potential for user input in rental housing design. Through these approaches, spatial quality criteria are combined for future improvements. Also, Hidayah and Shigemura (2005) examined the domestic space arrangements of private rental housing facilities in the case of *kampung* settlements, aiming to clarify how households re-arrange their domestic space when it is to be shared with tenants. They discovered that households lost 10% to 50% of their space to tenants.

To manage and improve this spontaneous residential environment, as well as to develop proper planning solutions, studies on the spatial structure characteristics of kosts, it is important to understand the various configurations and issues that may arise. This is an original contribution towards this study.

2. Method

This study applied the following research methods:

(1) Jakarta as the capital city and a dominant center of economic, social, administrative, and other activities in Indonesia (Susantono, 1998), was found to be suitable as a case study of urban settlement. Data collection and statistical studies were used to develop a clear picture of kosts in Jakarta and applied as a basis for the investigation of kosts. Based on the statistical data from the Jakarta Tax Service Agency, further investigations were based in West Jakarta (Fig.1.) as the municipality with the most number of kosts.

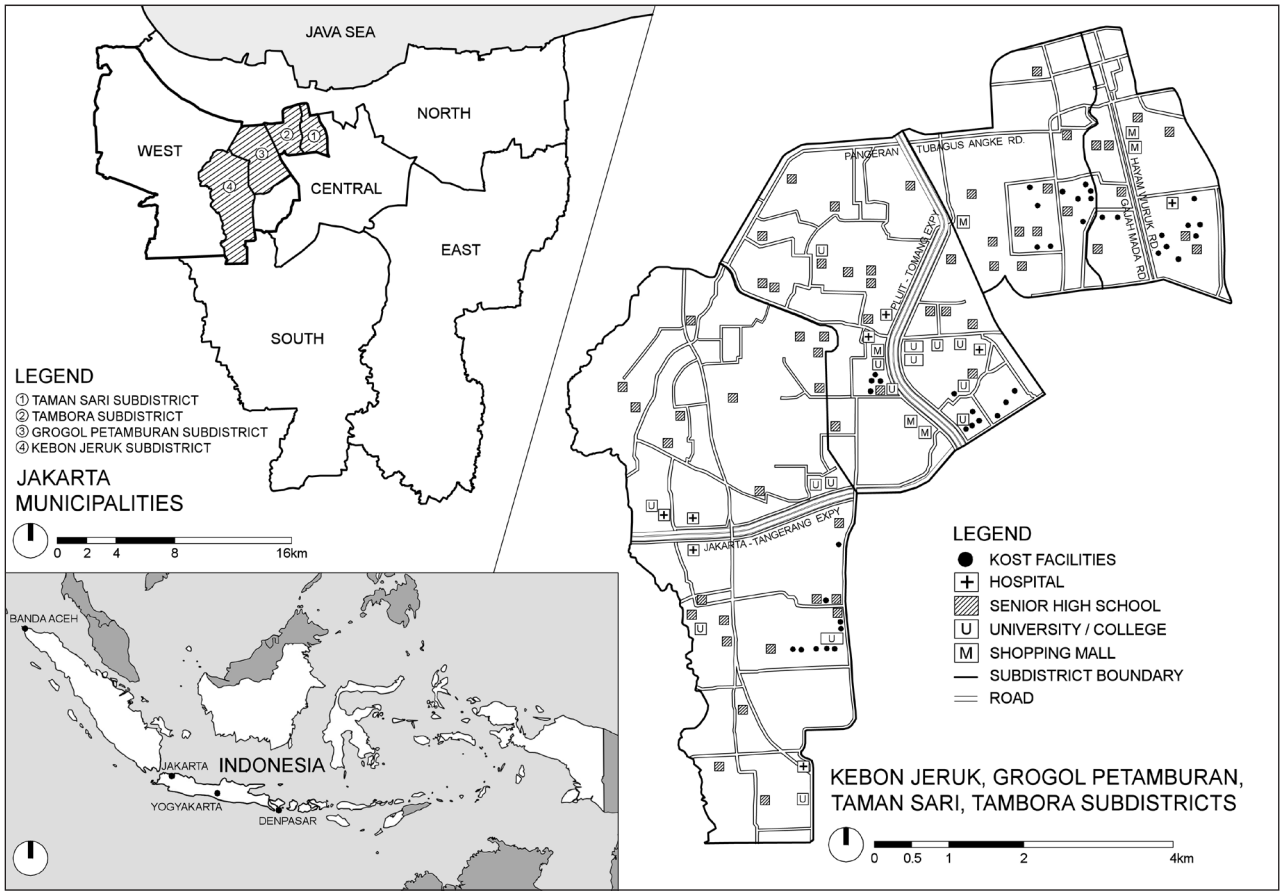


Fig.1. Location Plan of Survey Area

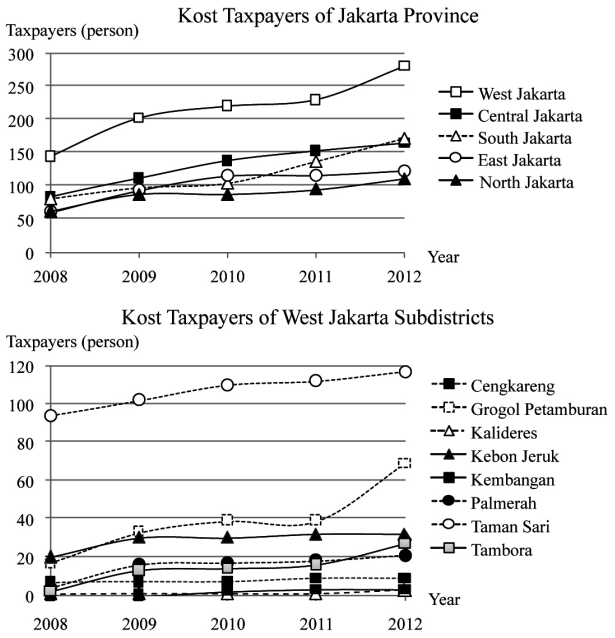


Fig.2. Kost Taxpayers of Jakarta Province and the Sub-districts of West Jakarta Municipality from 2008 to 2012 (Banuaji A. (2013) Jakarta Tax Service Agency, personal comm., Feb 18)

Furthermore, on-site investigations were conducted in the top four sub-districts of West Jakarta which have the most number of kosts (Fig.2.).

(2) In order to acquire an overview of the living environment in kosts, on-site investigations, which included personal interviews and layout mapping, were conducted in January 2013 for kosts found in Grogol Petamburan, Taman Sari, Kebon Jeruk, and Tambora sub-districts of the West Jakarta municipality. Forty-one cases were analyzed to describe the ways kost owners defined the space for tenants (Fig.1.).

3. Rental Housing Facilities in Indonesia

Rental housing is defined as a housing facility with rental status in all or parts of its facility. From the viewpoint of the user's needs, the property is rented due to (1) ownership issues, (2) the need to live in non-permanent housing for a period of time or at a certain location (Kemp and Keoghan, 2001 as cited by Nurdini and Harun, 2012; and Ozaki in Bartlett, 2002 as cited by Nurdini and Harun, 2012), or (3) preference for renting rather than buying (Kenyon and Heath, 2001 as cited by Nurdini and Harun, 2012).

There are several types of rental housing facilities in Indonesia including rental houses, dormitories, *rusunawa*s and kosts. A rental house is a house for rent. It can be in the form of a house or an apartment unit paid generally on a yearly basis. A dormitory is a temporary home to a group of people, made up of several rooms and led by a dorm head (Indonesian Ministry of Education, Center of Language, 2008). The eligibility of tenants is restricted, i.e. people from certain groups related to the facility owner.

A kost is a rental facility paid on a monthly basis, and the fee may include other services depending on the arrangement (Jakarta Housing Department, n.d.). In a kost, bedrooms, instead of the whole house, are rented out to tenants. Each kost has its own rules depending on the owner's decisions. The Regulation of Indonesian Ministry of Housing No.18/PERMEN/M/2007 mentioned that a rusunawa, or a public rental flat, is a high-rise building with a lease status, built by the funds provided by the state or regional budgets, mainly functioning as a shelter, and with units used separately. In this case, a rusunawa is the closest type of housing to a kost, since it is paid for on a monthly basis and is generally open to anyone instead of only to people related to certain groups or organizations.

4. Kost in Jakarta

4.1 Overview

Viewing the development of kosts in Indonesia since the Dutch occupation until the present, a reduction in the sense of family has been seen, and the social interaction between owners and tenants began to develop into an economic interaction. The owner-tenant relationship becomes purely business and tends to be in the owner's interest and profit (Jakarta Housing Department, n.d.). Kosts developed into a business when homeowners began trying to earn additional income by renting out the extra space in their homes for people to stay, due to the increasing living expenses in Jakarta. Since then, more owners have been creating kosts that can lodge many tenants in one house. Changes in the owners' stage of life and the demand for cheaper housing options, especially for people from outside Jakarta or those who reside far from their place of employment or education, are also contributing factors to the development of kosts.

The Jakarta Governor Decision No. 2693 Year 1987 provides guidelines for kosts and mentions that kosts require a permit. Also, Jakarta Regional Regulation No. 11 Year 2010 on Hotel Tax defines tax objects which include kosts that have 10 or more rooms. However, despite the fact that some regulations are applied, many owners do not register their kosts. Some think that by registering, they will have to deal with tax issues, and having taxes applied will affect their business.

4.2 Location

Kosts are usually established in central locations. However with the convenience of a range of transportation methods, kosts may also develop in locations adjacent to highways, main roads, roads served by public transportation, or even small alleys that are connected by footpaths to bigger roads.

4.3 Constraints of Surveying

Facility accessibility and the locating process were the main constraints during the survey. Firstly, as kosts are privately owned, access depends on the owners' decision. In some cases, owners were also wary about strangers entering their premises with the intention

of copying the kost layout and possibly affecting their business. In addition, many kosts are intended for certain genders only, resulting in the difficulty for the researchers to access kosts intended for the opposite gender. Thirdly, most kosts are not registered, resulting in the non-existence of signs in many cases. This condition caused difficulty in identifying kosts as generally they have the typical look of private homes.

4.4 Typical Look

Kosts may come in various conditions; from permanent to non-permanent structures, with walls made of clay bricks to those of wooden boards, and well-insulated buildings with many rooms or the type with only a few rooms attached to the main house.

Many kosts have the look of common private houses. Some owners put signboards outside, stating the availability of a kost and the owner's preference concerning their ideal tenant(s). However, when no signboard existed, it was difficult to decide whether the facility was in fact a kost. In this case, the existence of multiple air-conditioning outdoor units gives a hint that there are a lot of bedrooms inside, thus giving an indication that the house might be a kost. In addition, the existence of numerous vehicles in the parking lot or an unusual amount of laundry hanging outside may also reflect a large number of people living inside.

Moreover, modular or identical rooms, which are arranged space-efficiently on more than one floor as determined just by looking at the outside façade can be observed. The façade may have similar characteristics to a dormitory or hotel which usually contains repetitive patterns, although in some kosts, the patterns look homier, creating the feel of a common house.

Another indication of a kost is the existence of a special building structure, such as an outdoor staircase that goes directly to the second or third floor, built to provide access for tenants and to separate the tenants' entrance from the owner's entrance. Some owners have also added another building within the same plot of land. These additions may clearly look "different" from the main house. Low security access may also indicate that the access is not used by owners (Fig.3.).

(a) (b) (c)

(a) Sample of kost with modular layout plan
(b) Samples of *kost*s with the special building structure
(c) Samples of *kost*s with signs of crowd

Fig.3. Typical Looks of Kost

4.5 Owner and Tenant

In regard to kosts, the two main subjects involved are the kost owner (O) and the tenant (T). The term "owner" in this paper refers to the owner of the house and whoever stays with them without paying rent. The term "tenant" refers to people who stay on a rental basis. Both single and married tenants exist, and they are usually employees or students. A short summary of the abbreviations used in this paper is shown in Fig.4.

In most cases with no owner living inside, housekeepers hold the sole responsibility of running and managing the kosts. In addition, some owners employ security guards to improve the security of their kosts. In this study, housekeepers and security guards are classified as the "owner". However, they are not counted as "owner" in the owner-tenant shared space calculation because interruptions to their privacy are not considered as affecting the privacy of owners.

O = Owner	RT/ORT = Renter-tenant/owner-renter-tenant.
T = Tenant	Type A = Owners share living space with tenants.
R = Renter	
PA = Private area	Type B = Owners stay in separate living space.
TA = Tenant area	Type C = No owner stays in kost.
RA = Renter area	x = No renter exists in kost.
SA = Shared area	y1 = Renter exists but no RT/ORT SA.
OT = Owner-tenant	y2 = Renter and RT/ORT SA exist.

Fig.4. Abbreviation Summary

5. Kost Space Division

5.1 Owner Space, Tenant Space and Living Space Separation

The surveyed kosts show two main conditions, i.e. kosts with owners living side-by-side with tenants, and kosts with owners living in completely separate houses (type C). In cases where the owners and the tenants are living side-by-side, type A owners shared their living space with tenants, while type B owners had separate living spaces (Table 1. and Table 2.). Some kosts have one shared entrance, while others have two or more entrances, in which at least one of them is an entrance exclusively for the owner (Table 2.).

5.2 Renter Existence

It was observed that a number of owners of type B (42.11%) and type C (21.05%) kosts did not rent out their space to tenants exclusively but also to other parties with different arrangements in place or for other than residential purposes. To separate this group from kost tenants, they are described as "renter" (R) in this paper. Renters could be business owners or rental house tenants. The shared space between renters and tenants exists (By2: 26.32% and Cy2: 15.79%) in most cases while it does not exist (By1: 15.79% and Cy1: 5.26%) in other cases. Sub-classification "x" refers to the cases in which no renter exists (Table 1.).

5.3 Enclosed Space Patterns

Common space is used for less private activities and as circulation space. The conversion of common space into enclosed space may reduce the provision of natural lighting and ventilation (Thanousorn, 2010), and affect

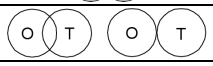
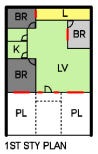
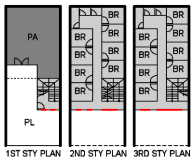
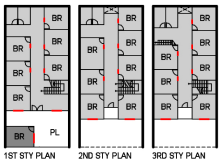
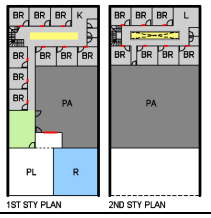
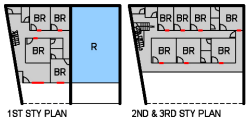
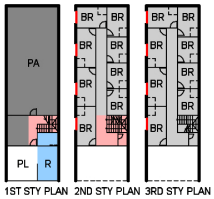
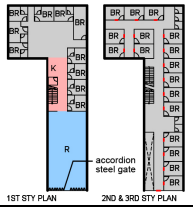
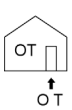
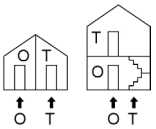
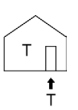
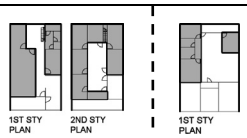
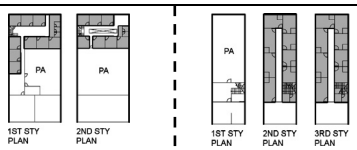
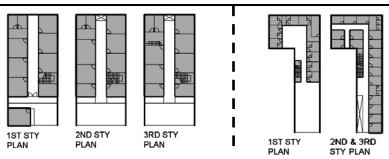
residents' feelings and comfort levels. As the structure of enclosed spaces shapes the common space, these patterns were analyzed (Table 2.). The term "enclosed space" refers to confined spaces with small openings to other spaces, e.g. bathroom, bedroom, and storage. Enclosed space is used as tenant space, owner space, and shared space in some cases.

In type A, the enclosed space patterns are mostly irregular and the plans are not modular between floors. Most bedrooms have direct openings to an open space and better provision of natural lighting and ventilation. In addition, type B and C show the opposite pattern and modular plans between floors. The enclosed spaces are used mostly for tenants' bedrooms, and the efficiency of the tenant's habitable space is achieved to a greater extent. However, most bedrooms do not have direct openings to an open space, and the provisions of natural lighting and ventilation mostly do not meet the Indonesian General Guidelines of Basic Healthy Homes (Indonesian Ministry of Public Works, n.d.).

Table 1. Kost Classification Method

	Subdistricts	GROGOL PETAMBURAN (G)												TAMAN SARI (TS)										KEBON JERUK (K)										TAMBORA (T)									
	Kost cases	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
STEP 1	Owner stay in/involved	×	×	×	×	○	○	○	○	○	○	×	×	○	○	○	○	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	×	○	×	×	○	○	○	○	○	○	×
STEP 1	O-T living area separation	×	×	×	×	○	×	×	○	○	○	×	×	○	○	○	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	×	○	×	×	○	○	○	○	○	○	○	×
	(○ = yes; × = no)																																										
STEP 3	(O-X = A; O-O = B; X-X = C)	C	C	C	C	B	A	A	B	B	B	C	C	B	B	B	A	C	C	C	C	C	C	C	C	C	B	B	B	B	B	C	B	C	C	B	B	B	B	B	B	C
STEP 2	Renter existence	x	x	x	x	x	x	x	y	x	x	x	x	y	y	x	x	x	y	x	x	x	y	x	x	y	y	y	y	y	y	x	x	x	x	x	x	x	x	x	x	y
STEP 2	(y = yes; x = no)																																										
STEP 2	R-T shared space	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1	2	1	1	1	2	1	1	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
STEP 2	(1 = no; 2 = yes)																																										
STEP 2	x1 = x; y1 = y1; y2 = y2	x	x	x	x	x	x	x	y2	x	x	x	x	y2	y1	x	x	x	y2	x	x	x	y2	x	x	y2	y1	y2	y2	y2	y1	x	x	x	x	x	x	x	x	x	x	x	y1
	Combinations	Cx	Cx	Cx	Cx	Bx	Ax	Ax	By2	Bx	Bx	Cx	Cx	By2	By1	Bx	Ax	Cx	Cy2	Cx	Cx	Cx	Cy2	Cx	Cx	Cy2	By1	By2	By2	By2	By1	Cx	Bx	Cx	Cx	Bx	Bx	Bx	Bx	Bx	Bx	Cy1

Table 2. Comparison between Type A, B, and C Kosts

		Kost Type		
		Type A (7.32%)	Type B (46.34%)	Type C (46.34%)
Owner - Tenant Relationship				
Owner - Tenant Space Relation				
Space Division	x	 Case G7 Owner stays in kost. No renter exists.	 Case T1 Owner stays in separate living space in kost. No renter exists.	 Case K2 Owner does not stay in kost. No renter exists.
	y1		 Case K8 Owner stays in separate living space in kost. Renter exists but no RT/ORT shared space.	 Case T10 Owner does not Stay in kost. Renter exists but no shared space between renter and tenants.
	y2		 Case TS1 Owner stays in separate living space in kost. Renter and RT/ORT shared space exist.	 Case K3 Owner does not stay in kost. Renter and RT/ORT shared space exist.
Entrance Separation		 Owner and tenant share the same entrance.	 Owner and tenant use different entrances to enter their living space.	 Owner does not enter the facility.
Enclosed Space Patterns		 Cases TS4 and G7 The space is less enclosed and irregular.	 Cases K8 and TS1 Plans between floors tend to be modular. Less open space than enclosed space.	 Cases K2 and K3 Plans between floors tend to be modular. Less open space than enclosed space.

Window
Private area
Tenant area
Renter area
RT/ORT shared area
OT shared area
Outdoor area
Transparent roof with ventilation opening

BR = bedroom
K = kitchen/pantry
L = laundry
LV = living room
R = rental space
PA = private area
PL = parking lot

Long corridors, serving as circulation space, connect tenants' bedrooms, and in most cases they do not allow cross ventilation. Moreover, a number of them were extremely narrow, e.g. double-loaded corridors with 50-to-60-cm width. In cases with wider corridors, tenants tend to store their belongings there, making the circulation space narrower. As a result, while the corridor and exit system are critical for emergency evacuation, the provision of a safe escape route seems to be inadequate in most kosts.

5.4 Spatial Occupation Distribution

During the survey, private area (PA), tenant area (TA), and shared area between owner and tenants (OT SA), as well as renter area (RA) and shared area between renter, tenant and owner (RT/ORT SA) were noted and calculated based on observations and interviews with owners and housekeepers, and the areas were compared by percentage (Fig.5. and Fig.6.).

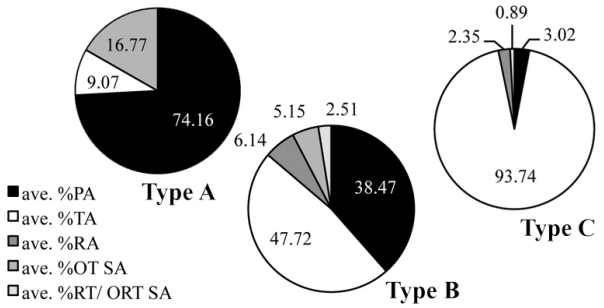


Fig.5. Kost Spatial Occupation Distribution Overview

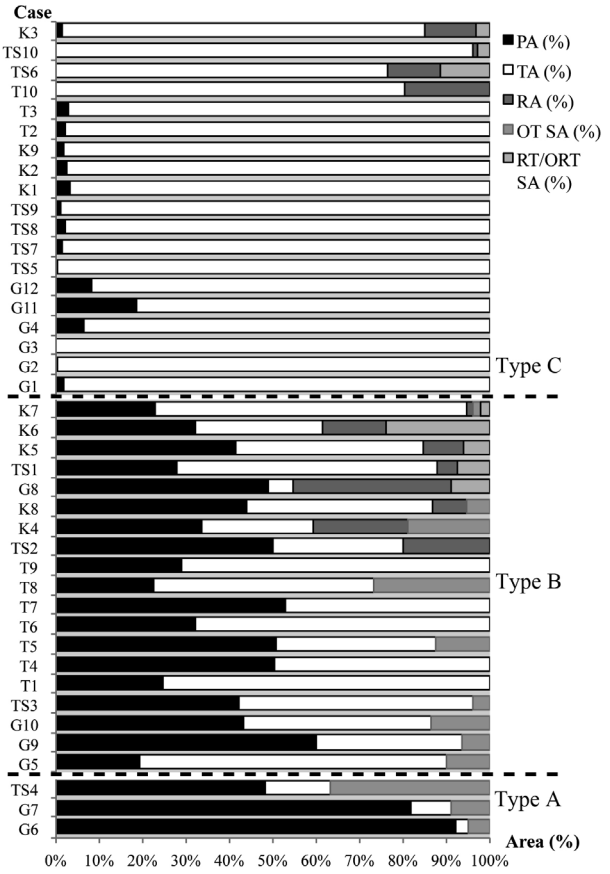


Fig.6. Proportion of Spatial Occupation of Surveyed Kosts

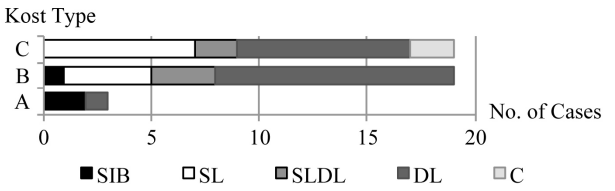
In type A cases, private area percentage (74.16%) tends to be much higher than tenant area (9.07%). It may imply that owners are still the main residents and tenants are secondary, although a certain level of intrusion into the owner's privacy is acceptable, as shown by the existence of OT SA in all cases. Type B cases show that although the tenant area (47.72%) tends to be larger than the private area (38.47%), the area percentages are relatively close. It shows that in type B kosts, owners had the intention of creating space for tenants, although they still try to keep their privacy by limiting the common space. On the other hand, type C shows the opposite tendency with the percentage of tenant area (93.74%) being much higher than the private area (3.02%), implying that although owners do not use the facility, they still allocate some space for their own use or to provide space for kost housekeepers. This may suggest that the patterns of spatial occupation in the kost correspond to the presence or direct involvement of a kost owner in the kost, and the living area separation between the owner and the tenants.

5.5 Bedroom Arrangement

Tenants' bedrooms are the most important areas in a kost, as this is the main space for which tenants pay. Some kosts accept more than one tenant per bedroom. A number of owners give more consideration to the room quality, e.g. natural ventilation, natural lighting, and room size during space planning, while others concentrate on habitable space efficiency that leads to a higher revenue. During the survey, five patterns of tenants' bedroom arrangements were seen (Fig.7.).

The first is the type of plan in which common space is placed between bedrooms (SIB) providing more relief compared to other layouts. All SIB kosts observed have the lowest percentage of tenant area. In the second pattern, most bedrooms are arranged in a circle, allowing access in the center (C). The third and fourth types show most bedrooms arranged in rows along one side of an access corridor (SL), and on both sides of an access corridor (DL) respectively. The last type is a mix between SL and DL (SLDL).

DL types were the most common followed by SL types, and most of these were type B and C cases. This seems to be due to the fact that obtaining higher



SIB = Other space is placed between bedrooms.
C = Access circulation is at the center while bedrooms are on the perimeter.
SL = Bedrooms are along one side of the access corridor.
DL = Bedrooms are along both sides of the access corridor.
SLDL = The mix between SL and DL.

Fig.7. Bedroom Arrangement Patterns of Surveyed Kosts

habitable space efficiency is made easier by arranging tenants' bedrooms according to the single-loaded-corridor and double-loaded-corridor plan types. However, crowding was experienced more in these types, due to the high flow of traffic in the circulation space. The provision of natural ventilation and lighting does not seem to be a main consideration as it was insufficient or even unavailable in many cases. Overall, better living spaces including the provisions of natural ventilation and lighting were noticed in SIB kosts.

6. Response to Kost Spatial Arrangements

6.1 Changes in Living Patterns

Based on personal interviews with tenants, a shift in the way tenants utilize the space in relation to the order of space was noted. Many kosts did not provide sufficient space for daily activities, while some banned certain activities even though the space for it existed, e.g. no cooking in the kitchen and no accepting guests in the living room, resulting in tenants using other spaces, mainly their bedrooms, for these activities.

Many tenants also expressed the tendency to become reclusive whilst living in kosts. The lack of common space, the sense of high density outside the bedroom, and the unwillingness to interact with strangers were said to be the reasons that kept tenants inside their rooms most of the time.

6.2 Personal Territory Expansion

It is understandable that residents begin to carry out space extensions to compensate for their lack of living space (Wakita, 2010). Personal territory expansion by tenants such as occupying common space to store their personal items was noticed, mainly because of the lack of space in their rooms. Tenants' belongings were found in various common spaces, e.g. shared bathrooms, kitchens, living rooms, as well as corridors where the tenants' belongings affect the circulation space. (Fig.8.). This condition was found in type B and C kosts, but not in type A where the public space is either the owner's space or space that is to be shared with the owner. In this case, owners tend to prohibit such extensions as it affects their living space.

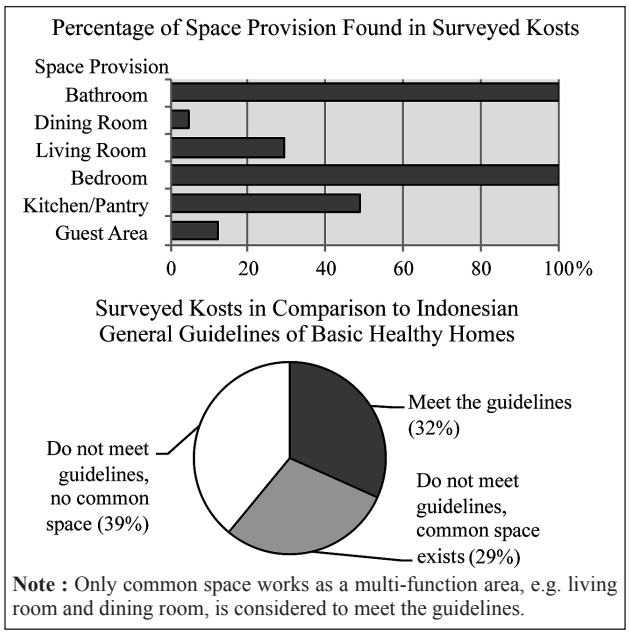
Fig.8. Personal Territory Expansions to Public Area in Kosts

7. Kosts as Homes for Tenants

Based on Indonesian General Guidelines for Basic Healthy Homes, a house requires at least one bedroom, one multifunction area, and one bathroom that facilitates bathing, washing, and toileting procedures.

As the conditions in kosts vary greatly, the provision and condition of the facilities in a house vary as well. For example, in the case of bathrooms, there are rooms with and without attached bathrooms. In regards to the first case, most attached bathrooms support bathing and toileting procedures, while some have a shower area only. Similarly, there are kosts with a kitchen and/or living room, while in other cases, cooking or accepting guests are completely banned.

However, it was observed that although bedrooms and bathrooms are available in every kost, more than 50% of kosts do not meet the guidelines due to the lack of a multi-functional area (Fig.9.). Some owners stated that common space was not a high priority because not every tenant will use the common space. Also, it is common for tenants to carry out most of their activities in their bedrooms, including accepting guests, although some kosts provide a separate guest area for tenants to receive a group of guests or guests of the opposite sex.



Note : Only common space works as a multi-function area, e.g. living room and dining room, is considered to meet the guidelines.

Fig.9. Space Provision on Surveyed Kosts in Comparison to Indonesian General Guidelines of Basic Healthy Homes

In addition, as the surveyed kosts accommodated from around 6 to 30 people per 100 sqm, kosts seem to be too crowded compared to single homes which generally lodge one main family. Moreover, even kosts may exist in the form of a single home, these

kosts accommodate outsiders who were total strangers to each other before moving into the kost. In this case, how close the design and planning of kosts can be compared to that of single homes becomes an important point to consider.

It is important to ensure that kosts are not registered as single homes. The Jakarta Housing Department implements guidance on several housing cases that are not considered a single home. A single home has relatively greater freedom regarding the design and planning as it is assumed to be privately used. For example, the registration of a single home does not require the applicant to obtain a Nuisance Law Permit. However, a kost may need to have this permit, as it guarantees that a business activity has no potential to cause harm, loss, or disruption to the neighborhood and is environmentally sustainable.

Moreover, the design and planning of kosts needs to be strictly controlled by the requirements of specific classifications, e.g. building height and fire risk. In this case, more design standards may apply to ensure the appropriateness of a kost.

8. Conclusions

This study reached the following conclusions:

(1) Each kost reflects a housing facility with design personalization. As kost conditions vary greatly, so does the provision and condition of the minimum space required in a house. There is a strong correlation between the conditions of (i) whether the owner lives in the kost or is involved in its management, (ii) whether the living area is separated between owner and tenants, and (iii) the pattern of spatial occupation in the kost.

(2) The tenants' bedrooms were predominantly arranged according to the single-loaded-corridor and double-loaded-corridor plan types because it is easier to obtain greater habitable space efficiency, although crowding is experienced more in these types due to the high flow of traffic in the circulation spaces. In addition, the provision of natural ventilation and lighting are insufficient or even unavailable at times.

(3) When comparing kosts to the Indonesian General Guidelines for Basic Healthy Homes, it was noticed that many kosts are still not fit to be considered healthy homes. The spatial organization and the lack of space also trigger the misuse of space and behavioral changes in tenants. The physical environment and social interactions must be improved to manage and develop the kost neighborhoods on a small scale, and the city environment on a large scale.

(4) The absence of specific regulations for kosts allows owners to freely develop their kosts. The arrangements are carried out following the owners' preferences as in private homes, while in fact kosts are more public, and not for the owners' use. Therefore, it is important to ensure that kosts are not developed with the same freedom as private homes. The definition and regulations of kosts should be considered based on those applied to other public rental housing facilities, e.g. rusunawa and dormitories, instead of private homes.

(5) Specific design standards and regulations in order to regulate kost environments, e.g. the living arrangements, safety measures, daily operation and space distribution, should be formed and strictly applied in order to improve the physical conditions of kosts, to provide better living conditions for tenants, and to maintain a sense of community in the residential neighborhoods.

(6) A separate discussion is needed to further explore the various issues, design, planning standards, and future suggestions for each living space within a kost. In addition, a specific study of current regulations, and various design standards as well as the calculation methods that have been applied in similar cases, are necessary to obtain a suitable standard to adopt and develop for kost cases.

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