

COPING WITH CROWDING IN HIGH-DENSITY KAMPUNG HOUSING OF JAKARTA

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Abstract

This study aims to draw attention to the architecture of kampung housing, as an attempt to identify those circumstances under which people live in the context of limited space. A kampung housing is a dense non-formally planned cluster of residential dwellings in urban area, which are packed together in a contiguous area created by a large number of migrants. We tried to determine the way in which the spaces are arranged into a place to live, which implies a certain dynamic of survivability among the kampung's inhabitants. The research methodology is conducted with questionnaire surveys, interviews, and detailed observations of daily life cycles, dwelling elements, and the pattern of domestic space arrangements. The study revealed that the characteristics of particular high-density settings have been adapted so that kampung inhabitants devised a particular set of rules and behavioral strategies to cope and support themselves in crowded situations.

Keywords: *Crowding; Dwelling; Space Arrangement; High Density Kampung; Behavioral Strategies*

INTRODUCTION

This article is an outcome of the Research Project Megacity and Global Environment funded by Research Institute for Humanity and Nature (RIHN), Kyoto in collaboration with Universitas Indonesia. It aimed to identify the city of Jakarta as being "a latecomer megacity", i.e. fast growing, but without long-established urban patterns and efficient infrastructure. Jakarta's population reached 9.99 million in 2015 and it is estimated the population will reach around 11.50 million in 2035 (BPS, 2015). The ever-growing mass migration of people descending upon Jakarta has intensified the problem of formal housing provision. The urban lower class inhabitants have to live in the fast-growing, self-emerging, and densely populated settlement called *kampungs*. This hardship of *kampung's* living has been intensified by crowding; either inside the house itself or the houses is crowded onto almost all available space. How do people cope with crowding and survive living in such densely populated place?

Crowding generally refers to people's psychological response to density; that is, to their feeling of being crowded, having a lack of privacy or an increase in unwanted interactions or psychological distress (Greenfield et al., 1973; Gove et al., 1979; Crothers et al., 1993; Jazwinski, 1998). Research on the consequences of crowding in urban housings has been done on a massive scale by urban sociologists and psychologists. They argue that crowded housings condition leads to poor mental and physical health, poor social relations at home, and have negative effects to child care (Baldassare, 1988; Freedman, 1970; Lawrence, 1974; Rodgers, 1981; Stokols, 1972). Yet, according to Altman (1978), crowding is a psychological state, a subjective experience that refers to a feeling of having very little space. Hall (1966) emphasized the theory that crowding is a subjective experience which appears to significantly vary across different cultures. Yet most of the scientific, cross cultural studies on crowding have been conducted within North America (Evans et al., 2000).

As crowding exists in three different modes of situational, emotional and behavioral perspective, it is a researcher's task to identify the personal, social and physical factors that lead individuals to label and experience crowding (Gifford, 2002). This paper does not intend to focus on the consequences of crowding nor measure prevalence factors associated with crowding. It attempts to reveal what the residents are doing and determine not only at what point they are in a crowded situation but also the ways for relieving crowding. The research question is: How do the *kampung* dwellers develop strategy to cope with crowding? As *kampung* inhabitants have clearly adapted to density, how does crowding affect their method of spatial arrangements to create decent domestic living space?

THE AIMS OF THE STUDY

Many studies have revealed that informal unplanned areas are densely crowded and uncomfortable, yet most studies are not accompanied by detailed study and a complete recording of the houses. Much study is focused on the effect of housing on health (Ambrose et al. 1996b; Baker et al., 2000; Muller et al., 2007; Evans et al., 2003) and the neighborhood (Brown et al, 2009; Curry et al, 2008; Sampson, 2003; Schulz et al, 2000). However, the relationship between crowding and health is extremely complex and is influenced by a number of covalent variables included the condition of housing and socioeconomic factors, such as income, employment status, and education (Fuller, 1993).

In terms of housing, although *kampungs* are not always equated with slums (Mc Carthy, 2003), many researches have concentrated on *kampungs* as being the urban underclass habitation with a poor state of infrastructure and degraded environmental condition (Silas, 2010; Jellinek, 1995; Suparlan, 1984; Nas, 2000; Somantri, 2007; Silver, 2011). Some researchers have focused on *kampungs* within the context of the history of Jakarta (Colombijn, 2010; Abeyasekere, 1987), economic and social life (Tunas, 2011), culture (Funo et al, 2005) and the transformation process of *kampung* (Funo et al, 2002; Funo et al, 2004). There is only one study on *kampungs* and crowding that focused on the issue of cultural differences in perceptions of crowding through identification of a wide range of expression related to crowding (Clauson-Kaas et.al, 1997). This paper addressed the lack of research on *kampungs* that is predominantly concerned with spatial constraint caused by crowding and the motivation to eliminate or reduce their salience. The study also enriches debates on the wide spectrum exploration and investigation on housing issues, especially in South East Asia (Salama, 2015).

As people living in *kampungs* are disregarded as subaltern or as "others", there appears to be little research that focuses on their living environment and everyday life. De Certeau in his famous conceptualization of strategies and tactics enhances the significance and necessity of analyzing "ordinary people's daily lives" (De Certeau, 1984). To do this, he emphasizes on people's practices as the multiple domains that demonstrate societal data. He states that everyday practices are not random actions of people; on the contrary, they have logic to be understood. Through analyses of power mechanism on daily life practice of "the others", he declared that ordinary people, in fact do not surrender to power and its regulations, but form invisible resistance.

As a preliminary attempt to recognize real-life circumstances under which people live in high density living environments, this research tried to determine the way in which overcrowded houses in the *kampung* are used and adapted as places to live. Bourdieu mentioned that most significant micro practices conceive the main element of whole society should be the "house". Dwellings are places that create different forms of discourse, lifestyles and practices by reproductions (Bourdieu, 1996). De Carteau stated that: "[t]his fragment of society and analyses is first of all the dwelling, which is as we know the reference of every metaphor. Through the practices that articulate its interior space, it inverts the strategies of public space and silently organizes the language (a vocabulary, proverbs, etc.)" (Certeau, 1984). Depending upon the

theoretical framework on an individual tactic in daily life, this research tried to bring everyday life and mundane practices to the forefront. The main focus of this study was *kampung* dwellers who were active agents of their own daily life practices. Within this existence, as “different ones”, they can produce new forms of resistance against generally accepted ways of living in formal housing.

METHODOLOGY

This study focused on *Kampung* Cikini at the district level or the Kelurahan Pegangsaan Central Jakarta. The case study is a representative of typical high density informal settlement in Jakarta. According to data from the Kelurahan, in 2014 *Kampung* Cikini covers 1.5 hectares and has a population of 3.784 inhabitants (2,522 person/ha). Data gathering consisted of two phases. The first phase was a questionnaire and survey conducted by the author in collaboration with Life Style Team of Megacity and Global Environment Research Project (Kato, 2012). The team distributed structured and semi-structured questions to 146 respondents in *Kampung* Cikini in September, 2012. All respondents were selected by a principle of volunteer participation. The investigation focused on how inhabitant' lifestyle impacted their behavior through questions on daily activities such as work, leisure, house repair activities, and social cultural activities.

The second phase aimed to find out through case studies how dwellings at *Kampung* Cikini had been arranged to cope with crowding. Interviewers went door-to-door of randomly selected blocks of *kampung* dwellings to observe the physical condition of the houses and seek households who were willing to be selected as survey participants. As Flick (1998) mentioned, in qualitative research, it is the relevance to the research topic rather than the representativeness which determines the way in which respondents/objects are selected. Eventually, only 20 respondents were willing to be selected as subjects for case studies. However, the number was sufficient to provide the relevant information for the research. The selected houses sizes ranged from 6 to 42 m². These houses typically represented the range from the smallest and the biggest houses. Each case categorically represented the house's type based on layout and modification.

To describe the way in which *kampung* dwellers arrange their domestic space, students visited selected houses for semi-structured interviews and detailed mappings of their dwelling situations based on precise measurements, photographs, and video documentation. Groups of 3 (three) students intensively worked on each house. The first student conducted the interview with house owners in their mother tongue; the second made interior sketches; and the third assessed other aspects of the house using photographs and videos. The students drew the use of space as well as the fixed and unfixed furniture used in the house. For each category, the students had to spend time to develop a rapport with the respondents to allow detailed investigation of their private domestic spaces and prevent inaccurate information. To reveal the spatial representation, students encouraged the inhabitants to talk not only on how they utilized the space, but also how they appropriated spaces as their home and what that spaces meant for them.

In doing the analyses, the spatial representation of recorded data was shifted into deeper architectural spatial knowledge within the richness of spatial usage. This knowledge can only come from residents, although they might not be able to articulate space as an everyday knowledge. Interpretations were developed from what the space represented and the sense of what respondents did not say about the space. As Miller (1987) pointed out, the conscious reading of space is often revealed in nonverbal clues. For that reason the residents' own voice and narratives were not always employed as quotations. From twenty cases studies investigated during research, based on categories on how they negotiate with crowding, finally seven cases were selected to be presented in this paper.

HISTORY AND ACTUAL CONDITION OF KAMPUNG CIKINI

Originally meaning “villages”, the irregularly formed *kampungs* had already existed for a long time and constituted one of the typical features of towns and cities in Indonesia (Rutz, 1987). During

the Dutch colonial era, the formal urban development plan bypassed the existing low density *kampungs* to integrate them into urban areas, but without ample provision for urban utilities and facilities. As a result, these settlements tend to be evenly scattered throughout the formally planned built-up areas. The *kampungs* provided dwelling places for the laborers at the wharves, warehouses; industries and public works as well supplied domestic helpers for middle class neighborhoods (Castels, 1967). By the middle of the 20th century, a massive numbers of migrants migrated to cities and found *kampungs* as attractive, easily accessible and cheap locations to live. New ad-hoc buildings soon infiltrated the vacant lands and transformed low density *kampungs* into high density, heterogeneous and sub-standard settlements. In 1969, almost 75% of the total population in Jakarta lived in *kampungs* (Rachman, 1995). They were the urban poor who had to face severe social and economic problems that forced the local government to declare Jakarta as closed to migration in 1970. In 1974, the government enacted *Kampung Improvement Program* (KIP) to improve the existing housing stock and allow for the provision of service. Nowadays, while it is very difficult to obtain the exact size of the population living in the *kampungs* due to the complexity of data, the Urban Poor Consortium (UPC) Jakarta reported that 20-25% of the total population in Jakarta lived in *kampungs* with an additional 4-5% living illegally along riverbanks, an empty lots and in flood plains (Urban Poor Consortium www.upc.org, 2010).

The history of *Kampung Cikini* is traced back in early 20th century, when the Dutch developed the district for the Dutch elite class in Menteng Estate. Native inhabitants lived along the bank of the Ciliwung River soon took the opportunity to provide service for upcoming well-to-do Dutch inhabitants. At the same time, the Dutch also developed the railway infrastructure through *Kampung Cikini*. In the 1960's, when the government closed down railway in the former location of *Kampung Cikini*, the railway track was overlaid with asphalt to transform it into a vehicular access. The railway yards and embankments were left vacant. People took advantage to squat and then built shelters in the empty spaces that they became denser every year.

While those who squatted the ex-railway yard claimed to have permission from National Railway Company (PT Kereta Api Indonesia), other inhabitants have declared semi-legal land ownership rights granted from the colonial authority called *hak girik* (tribal land right). This is a kind of land certification that is acknowledged by government, but it does not entitle them the rightful ownership of property (*hak milik*). Throughout the years, *kampung* householders have acquired a sense of complacency as they have received benefits such as electricity and paying *Pajak Bumi Bangunan* (PBB) or taxes for building and land, thus implying their land use rights. *Kampung Cikini* is located in one of the most expensive and sought after sites in Jakarta with close proximity to Cikini Train Station, the flower market (Pasar Kembang) a six-storey shopping center. The surrounding developments, such as hospital, hotels, offices, restaurant, and so forth offered an economic opportunity for low-income dwellers of *Kampung Cikini*.

Kampung Cikini is designated as an RW (*Rukun Warga* or Community Unit Group) and is divided into 13 RT (*Rukun Tetangga* or Neighborhood Unit Group), of which each RT includes 50-60 households. The demographic profiles of the inhabitants are rather diverse; they are coming from many different ethnic groups from around the Indonesian archipelago. The unclear status of land does not necessarily discourage the practice of an informal land market where many houses in the *kampung* were passed down to different hands across the years. Owing to the great location and accessibility of employment, recently the demographic texture of *Kampung Cikini* tends to be diversified by formal sector workers and educated people. The strategic location of *Kampung Cikini* and the rises in land value attract newly middle income occupants who seeking the immediacy of home in the city center.

As in most *kampungs*, social relations among inhabitants are relatively strong. Most of residents socialize and interact with each other at daily basis. As formal regulations were absent, the numbers of social groups and networks helped to establish order in *kampung*. Furthermore, the mandatory in Islamic social-religious customs, which are embraced by 97% of respondents

controlled the norms of daily life and bounded the community together. There were 5 (five) mosques in *Kampung* Cikini that indicates the significance of religious institutions to community living.



Figure 1. *Kampung* Cikini (Source: Ellisa, 2012)

DWELLING QUALITIES, LIFE STYLE AND NEIGHBORHOOD CHARACTERISTIC

Surveys and questionnaires about houses in *kampung* Cikini revealed that the building construction approach was typical self-help without any particular design method and refreshingly free from spatial constraints. Buildings are incrementally and gradually developed around the original starter unit or the basic shelter. The results were mostly a blend of old and new structures. Some buildings are remnants of older periods, while others have been recently renovated or completely rebuilt. Residents often add building extensions that occur not only because of the direct pressure from family growth, but also when the family acquired some source of additional funding. The building materials and finish quality are comparable to formal low-cost housing: 87.9% of the respondents used a reinforced concrete post and beam skeletal system with red brick infill. The roof is structurally formed of wood beams with fiber cement corrugated roofing. The ceiling height is typically low, and it does not allow for good air circulation. Flooring is largely ceramic tile over concrete floor.



Figure 2. Some Examples of Houses in *Kampung* Cikini (Source: Ellisa, 2012)

The houses have been expanded in such a way that residents found difficulties to make ample windows and openings to ensure cross-ventilation. As it was essential to withstand the hot humid tropical climate of Jakarta, all respondents had at least one electric fan to control the thermal comfort inside their houses. The assumption that low income, high density housing constrains the possession of home electrical equipment is completely misleading. The questionnaire survey revealed that various electrical appliances were fully used for resident's daily-life activities. Mobile telephones were not necessarily seen as a luxury or even as a status symbol, but these devices

provide a sense of withdrawal from the main residential space for people who had no private space of their own. High density living does not constrain those who have hobbies and interests that occupy comparatively large spaces, such as keeping birds and breeding fish.

For the inhabitants, the *kampung* represents more than just a space to live; it offers security and stability. Kent (1990) pointed out that the house cannot be seen in isolation from the settlement, but it must be viewed as part of a total social and spatial system that relates to the way of life of a particular settlement. Unlike vertical urban tenements, the morphological arrangement of the *kampung* offers some advantages. As there are no formal rules and or rigid distinctions between private and non-private space, it is very normal for residents to make use of the space immediately outside their homes to do their laundry, keep belongings, cook, prepare food, and eat meals. Living together as a community the inhabitants secure about leaving their doors and windows open. High visibility inside and out gives neighbors plenty of opportunities to interact and chat. Since everybody knew everyone else's business, there is no need to interfere and the residents could live together in a spirit of mutual reliance.



Figure 3. Outdoor Alleys of Gangs in the *kampung* (Source: Ellisa, 2012)

QUANTIFIABLE MEASURE OF THE HOUSE

Before understanding how residents deal with crowding, we need to measure the quantifiable manner of dwelling units in *kampung* Cikini. A questionnaire survey of 146 respondents revealed that 24.3% of the respondents were living in households with 4 (four) individuals, 23.4% were living with 3 (three) individuals, 16.8% were living with 5 (five) individuals, 12.1% were living with 2 (two) individuals, 8.4% were living with 1 (one) individual, and 7.5% were living with more than 6 (six) individuals. The average number of individuals in the household was 3.93. In comparison with the situation during the urbanization boom in previous years, nowadays those who live in the *kampung* are not predominantly members of an extended family.

Regarding the number of rooms they lived in, it revealed that 39.3% of the respondents lived in a household with 1 (one) room, followed by 32.7% who were living in 2 (two) rooms, 19.6% were living in a household with 3 (three) rooms, 5.6% were living in a household with 4 (four) rooms, and 1.8% living in a household with over 4 (four) rooms. The median of room number of rooms was 1.5rooms/household. When compared with the average number of individuals in the household and median number of rooms, each person in a household had 0.38 rooms/person. This indicated that the dwelling unit at *Kampung* Cikini was far below the range 0.6 rooms/person to 0.8 rooms/person of the European standard (Edwards et.al., 1994).

To understand the size of habitable floor space, we categorized the houses ranging within an interval of 10m². The survey revealed that 22.4% of the houses had room sizes in the range of 11–20 m², 23.4% had room sizes in the range of 21–30m², 7.5% had room sizes in the range of 31–40m², 14.0% had room sizes in the range of 41–50m², and the rest were found to be distributed randomly between 50 and 100m². The median floor area was 23.5m². A comparison between the median of floor area and the average number of individuals, with the average actual room consumption per person showed a value of 5.98m²/person, indicating that *kampung*

dwellers have inadequate living space, when compare to Indonesian National Standard of 9m²/person. It cleared that the quantifiable manner of houses in combination with the qualities of houses in the *kampung* indicated that *kampung* residents not only face the problem of sub-standard quality of housing but also overcrowding.

DWELLING SPACE ARRANGEMENT

As all buildings in the *kampung* were typical self-help and incrementally developed at the various extended time, there were no two houses the same. Yet, from twenty case studies investigated during the research period, they eventually were classified into 7 (seven) different types based on a combination of the sizes, the characteristics and the spatial arrangements. The selected cases consisted of two extended families, four single families, and two doubled households. Five selected houses were two-storey, one house was a three-storey, and one house was a one-storey. Basically, they were arranged to allocate furniture and user's activities which included access and movement inside the house, or what Bollnow identifies as the space of action (Bollnow, 2011). Based on how the inhabitants negotiate with crowding, all cases were clustered into four categories as follows: 1) a basic shelter; 2) a common house; 3) a house as an income generator; and 4) an ideal house.

Basic shelter type

Basic shelter was a very small house that it was almost impossible to include a wet area inside the house. As a consequence of crowding, the wet area in the *kampung* is defined as the space for a kitchen and a bathroom with or without a toilet. Many older houses that were built when the *kampung* was less crowded might have private toilets. However, as the *kampung* grew getting more and more densely packed, it becomes almost impossible to locate septic tanks. There was a rule that the newly build houses strictly not allowed to have an individual indoor toilet. For that reason, residents had to use the public toilet or *Mandi Cuci Kakus* (MCK) for bathing, washing, and toilet. Since they were sufficiently provided nearby, residents did not find it was inconvenient not to have private toilets.

Sundari House

Sundari's house was a one room shelter, 1.8m in width and 3.4m in length (6.12m²). As Sundari lived with her husband and three children, she needed to take the full advantage of the available space. Here was the place for all daily activities, ranging from sleeping, eating, raising children, studying, watching TV, and cooking. There was hardly any furniture inside the house except storage unit stacked next to the wall to keep all family belongings.

This family could not resist the problem of overlapping activities in their daily domestic life. All domestic activities were carried on with minimum equipment in whenever spaces were left free of belongings. Privacy was totally ignored because there was no compartmentalized space inside the house. Sundari said that intimate relations could only be done when all the children fell asleep. Anticipating crowding, her husband and children spent almost all of their daily activities outside, except sleeping at night. This allowed Sundari and her 2-year-old child to enjoy a more spacious feeling while being at home during the day. Our observation of her house revealed that there was no space to avoid feeling "cramped". Yet Sundari felt, as her family gradually grew and adapted to the space they eventually knew very well how to dwell in it. She said that although the house was barely furnished, it was not bare and empty like a prison cell. Excessive smallness did not mean an unsettling situation as each family member was able to stretch out at one's ease. She said that the important task of the house was to provide a refuge from the outside world. For Sundari's family, no matter how small the house, it fulfilled the basic concept that the dwelling space must give an impression of seclusion.

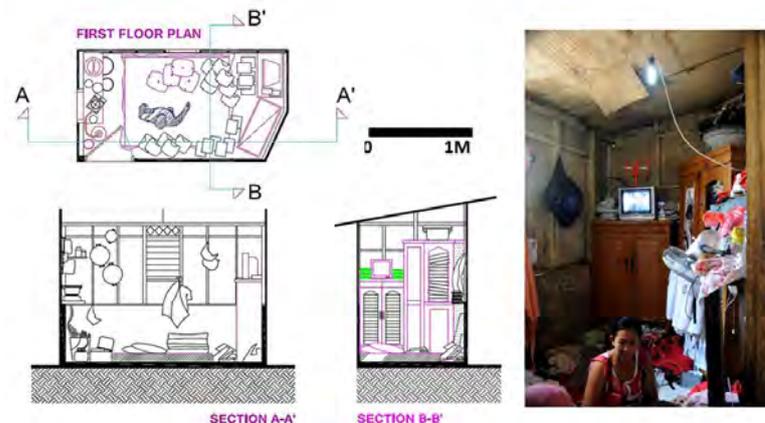


Figure 4. Sundari House (Source: Listiyanti, 2012)

Suheni and Mimin House

The case of non-related, doubled up household was very common in the *kampung*. The second case was this type of house occupied by two extended families that were living under one roof, one on the first floor and the other on the second floor. Both families lived with the elderly. The house was two-storey, each floor size was 2.43m×6.0m (14.58m²). The family living on the first floor was Suheni's family, which consisted of a couple, a paralyzed grandmother, and one child. The second floor was Mimin's family consisted of a couple, grandmother, and two children.

Suheni arranged her living place based on a relative degree of privacy, from back to front. She put the bedroom for herself and her husband in the back of the house, a divided room for her daughter and grandmother in the middle, and a multi-function room at the front. There were stairs in the middle of the room as the only access to Mimin's family to their living place upstairs. Two stoves-tops were located close to the stairs, one owned by Saheni and the other owned by Mimin. However, both housewives rarely cooked and preferred to buy edible food outside. In the multi-functional room, Suheni put all of her family belongings. As there was a large amount of furniture and belongings, the space for movement inside the house was very poor.

Like Sundari, when asking about her feelings in such an overcrowded house, Suheni demonstrated an impression of privacy in her house. Suheni and her family spend most of the time at home whenever possible. Crowding was a factor that depreciated the spatial quality of her home, but it did not appear to be an overriding deterrent to happiness. The smallness of her house did not restrict her family in spending most of their time at home. As Suheni did not enjoy socializing with her neighbors, during leisure time she preferred to watch TV while accompanying her daughter when she was doing her homework. She said disorder and clutter neither have a disquieting effect, nor disturbing her daily activities at home.

The second floor was occupied by Mimin's family. The family comprised a 70-year-old grandmother and a couple with a 7-year-old son and a baby. Here, the conditions were worse. There were two rooms, one was for the grandmother's bedroom and the other was the parent's room with their children.

Except for sleeping, the dwelling space was inadequate to provide sufficient internal space for basic daily living activities. During our several visits, we found that Mimin's family coped with this severe crowding by spending their daily activities outside as much as possible. Crowding forced this family to deal with two constraints. First, their shelter did not have any connection with the earth's surface. To reach their own house on the second floor, this family had to interfere to other family territories at the first floor. Second, there was scarcely any space to escape inside the house, as the whole space was packed with belongings.

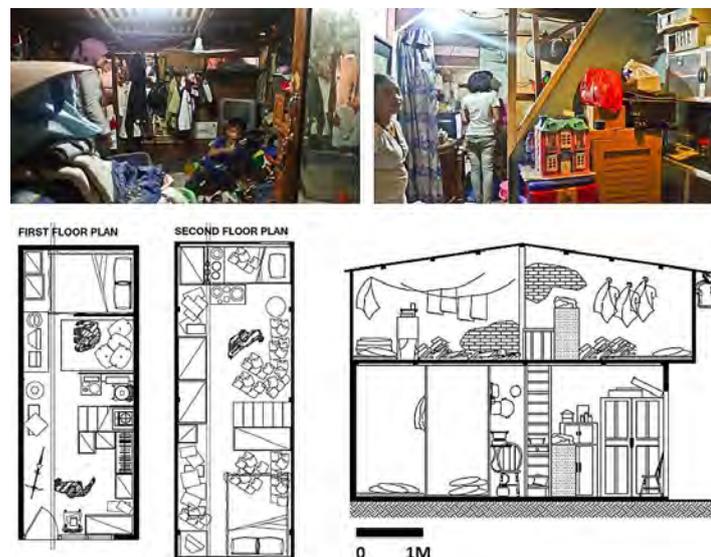


Figure 5. Suheni and Mimin House (Source: Listiyanti, 2012)

It was not surprising that Mimin did not express any feeling of intimacy with her home. She realized that her only choice was to stay outside most of the time. Normally, one might consider a house as the refuge from outside. However, for Mimin' family the house was barely more than a storage space. To escape from overcrowding, the exterior of the houses or "the outside world" was the best place. As the organic pattern of dwellings with *kampung* created no defined boundaries between private and public spaces, Mimin's family extend their territories beyond their actual dwelling and considered the public space simply as part of their own territory.

Common House type

The two houses below were examples of common houses in the *kampung* in terms of the total amount of space, the way in which space had been divided, the availability of space for supporting daily living activities, as well as the availability of a wet area.

Nanan House

The first common house type case was a three-storey house (4.3m×2.75m at the lower levels and 4.3m×3.5m at the upper level), owned by Nanan, who lived with his wife and adult son. As the head of the neighborhood community (*Rukun Tetangga*), Nanan often had visitors and discussed community matters with his neighbors. Therefore, he needed to set up the first floor almost entirely as public space. He located the wet area on the first floor, consisting of a mini-kitchen, washing machine and a bathroom without a toilet. Like most of the other residents, Nanan family would use the communal toilet at the MCK for solid waste, but they preferred to urinate on the cement floor in the bathroom. With no proper plumbing inside the house, the waste water simply flowed down into the gutter outside the house.

On the second floor, Nanan divided the area into two parts, one was a space for watching TV and family gathering, and the other was the space for the "master" bedroom. On the third floor, the space was divided into two parts, one was an area for drying clothes, ironing, and storage, and the other was for his married daughter. Yet the room was often empty, as his daughter eventually preferred to live in another place with her husband.



Figure 6. Nanan House (Source: Listiyanti, 2012)

The Nanan's house provided the basic internal functionality that included space for furniture needed by the residents (including occasional visitors), space to access the furniture, space to move around the house, space to undertake living activities (washing, dressing, cooking, eating), and space for the storage of daily items. The separation between the rooms allowed for the required level of privacy, but the size of the house was too small to provide adequate space to avoid the feeling of being "cramped". Nanan expressed the difficulty in deciding whether to fill up or to utilize the space inside his house. In order to function well, inhabitants needed to lessen the sense of individuality and maintain tolerance each other.

Een House

The second common house type case was a two-storied house with a size of 2.45m×8m (19.4m²) at the lower level and 2.45m×3.8m at upper level (9.31m²). Een shared the house with her married daughter who lived with her husband and twin daughters. The first floor was divided into two parts – one was at the front with a multipurpose room that accommodated several simultaneous activities. During the day it functioned as a common space and in the night it was transformed into a sleeping space for Een and her grandchildren. In the back of the house, the family utilized an extended narrow longitudinal space for a bathroom with a toilet and a kitchen. The second floor had become a multipurpose space, irregularly arranged as the area for watching TV, storage, and drying clothes. Een arranged a bedroom for her married daughter by putting a simple divider for privacy.

The Een's house represented a common house type in the *kampung* as we often noticed similar ones during our field observation. These houses were arranged with no separation between the spaces for storage and living activities. Nevertheless, the house showed a strong flexibility and adaptability for multi-family accommodation. On one hand, there was no effort to arrange the house into a more comfortable place to live, but on the other hand, it implied the effort of multi-family members to adjust their lifestyles to live in crowded conditions under the same roof. For family members, this was not a problem as they were living with family members.

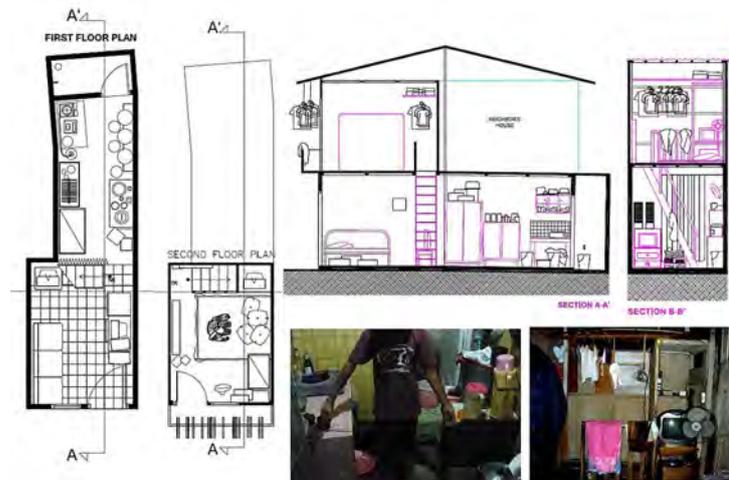


Figure 7. Een House (Source: Listiyanti, 2012)

During the interview, Een family members expressed little interest in improving the use of space. It was not that they were dissatisfied or felt they already had sufficient space, but rather because they were not sufficiently motivated. Ironically, this reluctance to improve the spatial arrangement of the house seemed to be dominantly represented in the character of domestic space in the *kampung* housing. The two generations also exhibited a marked contrast in consumption attitudes that triggered overcrowding, as all belongings of this family were not always essential items. Een's daughter mentioned the generation gap between her mother and herself when she referred to her mother who continued to use of things her daughter considered either old or useless.

The house as an income generator

Lack of access to the formal job market has encouraged the inhabitants to use their crowded domestic space for generating income. Many houses accommodate these activities such as a *warung* or a stall, services, private rented rooms, and small enterprises production. Each had different characteristics with respect to space organization and the nature of work. The double functioning of the dwelling as both home and workplace had transformed the domestic space into an essential shelter for subsistence activities. The alteration of domestic space into a home base for income generation also indicated the security of tenure of living in the *kampung*. As the dwelling space itself faced the problem of congestion in dealing with domestic activities, the inhabitants have to find their own working space within these limitations. There are two case studies for the house as income generation, the Atin house and the Rosadah house.

Atin House

The first case of the house as an income generator was Atin's house. Atin was a single mother living with her adult son and her married daughter with one child. Owing to its strategic location, Atin had fully utilized the house to generate the family's income through culinary production. As cooking activities needed more space, when compared to Jaya's house, Atin's house was bigger (4.2m×4.7m or 19.74m² at the lower level and 4.2m×5.9m or 24.78m² at the upper level).

Atin used the space sparingly between food production and daily living based on time differentiation. During the day, the entire area of the first floor became the kitchen and food stall. She simply aggregated the space required for cooking activities which were butted up against one another without any leftover space. She collected water for cooking from the faucet in the bathroom in the corner of the house. At night, Atin cleared all the cooking appliances, put them

near the wall, and transformed the space into her sleeping area, a place for relaxation, and for enjoying TV. She dedicated almost the whole day for cooking while at night what she needed was merely a place for a little relaxation and sleep.

The second floor was entirely used as the living space for her children, consisting of one bedroom for her son, one bedroom for her daughter's family, and one empty bedroom. There was nothing special about the second floor because it represented a common living space and arrangement in the *kampung*.



Figure 10. Atin House (Source: Listiyanti, 2012)

Rosadah House

The second case was Rosadah's house. It was an irregular shape (7.3m×2.3m or 16.79m² at the lower level and 8.1m×3.1m or 25.11m² at the upper level). Rosadah was 70 years old and lived alone. She occupied the first floor and arranged it in the same way as typical houses in the *kampung*. The house spoke of crowding that was not imposed by the spatial limitations, but produced by owner's own desire. Furniture took up a large amount of space and left almost no space for moving around. There was a small kitchen, but she almost never used it. Rosadah was fully aware, as she was living alone, she would have more space if she cleared out unused stuffs. Yet, she needed to keep so many things related to her past experience or when things were not easy to get.

Three rooms on the second floor used to be occupied by her children. She left one room for her grandchild who often visited her and rented the other two rooms for families. One was a couple without a child and the other was a family with two children. The renters accessed their rooms from the stairs outside and shared the toilet with the homeowner on the first floor.

Rosadah resorted to renting out the empty rooms to tenants for income. Without any spatial adjustment and rearrangement, her house was easily adapted to accommodate the change of family composition. She transformed the house from a single family into a multi-family dwelling. The presence of tenants on the second floor only required minimal interface, although they have to share a toilet. Neither the owner nor the renter considered this situation as a constraint.

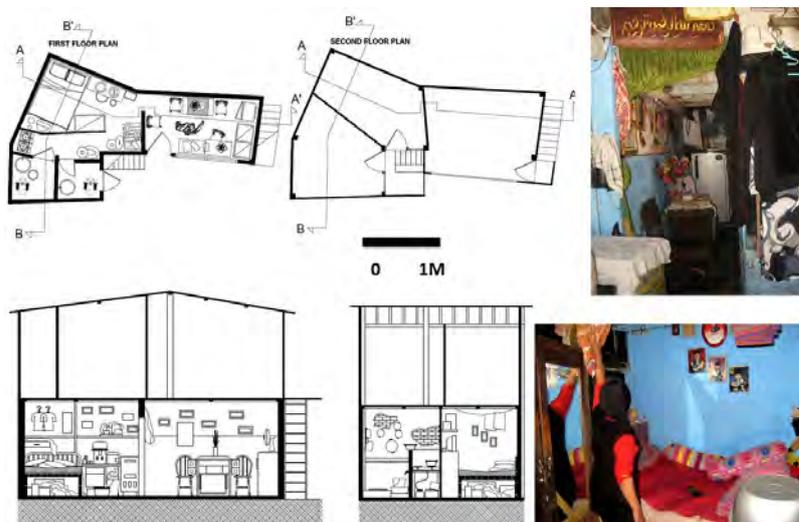


Figure 11. Rosadah House (Source: Listiyanti, 2012)

Ideal House – Siti House

We choose a small house (1.75m×4.38m or 7.66m² at the lower level and 1.75m×5.18 m or 9.06m² at the upper level) owned by Siti as the Ideal House. Here the owner skillfully arranged the small shelter into a neatly compact, multi-functional living space. Siti lived with her husband and two children. Taking full advantage of the available space on the first floor, she planned the circulation inside the house in accordance with the door placement. As a result, the room was not cut in two by the traffic flow as in other typical houses.

She clustered items into separated units to eliminate clutter and increased the floor space for circulation. She located a private bath, toilet, and washing area under the stairs, with the stove in the corner. In the kitchen, she utilized the space in-between the table and the ceiling height to store cooking utensils. She carefully arranged all furniture parallel to the walls and categorized them based on the character and closeness of activities. She arranged the space at the corner for watching TV. When the door was closed, the space in front part was transformed into a more spacious place. Siti decided not to hoard things and made a special effort to keep their possessions in minimum.



Figure 12. Ideal House (Source: Listiyanti, 2012)

As in other cases, she also utilized the second floor for sleeping and storage. She put a double bed at one side of the wall and spread a curtain to divide the bed from the storage area. She eliminated less essential furniture to provide more usable space. There were no laundry clutters because she hung the clothes on the balcony. Finally, she kept less-used belongings in the attic. Siti was a rare example of *kampung* residents. She consciously decided not to accumulate things and made a special effort to minimize possessions. With careful decisions to select specific belongings she developed a sense of spatial logic by making the best use of the space available in her house.

DISCUSSION

All cases discussed in this paper show that although individual differences aroused different ways of compromising lifestyle choices within a high-density situation, the characteristic of particular high-density settings motivated the inhabitants to develop a specific set of rules and strategies to help them cope with crowding. (See Table 1).

The lessons learned from these four categories are as follows:

- a) There was no minimum size requirement in the basic habitable parts of dwelling in the *kampung*, because inhabitants always found ways to use and negotiate with the existing living space, notwithstanding the number of persons who live within homes and how they relate to each other. The smallest dwelling basically was arranged into a space for sleeping at night and the storage of “dry” belongings. As inhabitants showed mixed responses, either highly tolerant or by withdrawal to minimize the inconvenience of living in such crowding, further insight is needed to answer how this marginal shelter meets the fundamental standard of health, privacy, safety and morality.
- b) In all cases, the addition of the wet area (toilet, kitchen, washing) into the dwelling area increased crowding and poor hygienic practices. It caused space reduction, either in the habitable rooms or for the storage space. In terms of cooking activity, there was continuing uncertainty on whether the kitchen space inside the house had to be maintained or at least reduced, because in many cases, the inhabitants preferred to buy edible food outside. A further insight needs to be considered whether an indoor kitchen manifests a practical function or is simply symbolic attribute within the housewife’s realm in the *kampung*.
- c) The majority of common houses in the *kampung* sufficiently provided the basic internal functionality of the house with a number of mechanisms to cope with crowding. Better than a basic house, these common houses provide at least a minimum degree of privacy through the separation of rooms. However, the size of the house was too small to provide adequate space to avoid a feeling of being “cramped”.
- d) The effort of the inhabitants in all cases to compartmentalize the space for sleeping, whenever possible indicated that the lack of privacy from an open-plan arrangement was a major issue. The main concern was about sleeping space for adolescent and adult members of the opposite sex, except the husband and wife.
- e) The attitude of the residents to keep things does not appear to be restricted by density. In the absence of spacious rooms for storage, there was no way that the items which the family might wish to be put away could be hidden due to a lack of storage units. The spatial appropriation for the placement of belongings was not always a conscious action, but was often based on what was convenient and close at hand.
- f) Crowding is very much associated with household size and composition, which reflects not only the affordability issue but also cultural norms. Yet, crowding lessened as children grow up and leave home. Therefore, crowding was temporary, dynamic and will change over time as the age and composition of households change.

- g) The primary motivation of the spatial arrangements for most of the residents who live at houses hosting economic activities focused on the need to accommodate the space for the “business,” rather than the need to create a comfortable living space.
- h) The case of the Ideal House revealed that, notwithstanding the size, the inhabitant’s ability to arrange a small space through zoning daily activities, clustering items, and eliminating less essential furniture was the key in finding the best way to cope with “crowding”.

Table 1. Characteristics of Houses of Seven Case Studies (Ellisa, 2012)

	BASIC SHELTER		COMMON HOUSE		INCOME GENERATOR		IDEAL
OWNER	Sundari	Suheni & Mimin	Nanan	Een	Rosadah	Atin	Siti
SIZE (SQUARE METERS)	6.1	20.1	42	28.9	27.2	41.9	16.7
FLOOR NUMBER	1	2	3	2	2	2	2
NUMBER OF THE ROOM	1	5	6	4	4	9	7
NUMBER OF PERSON	7	9	3	5	8	4	5
FAMILY TYPE	Nuclear Family	Doubled up household	Nuclear Family	Extended Family	Owner and Renters	Extended Family	Nuclear Family
WET AREA							
Washing Tap	No	No	Yes	Yes	No	Yes	Yes
Toilet	No	No	No	No	No	Yes	Yes
Bath	No	No	Yes	Yes	Yes	Yes	Yes
SEPARATE SLEEPING SPACE	No	No	Yes	Yes	Yes	Yes	Yes
COOKING SPACE	Not available	Available but rarely used	Available but rarely used	Available	Available but rarely used	Available	Available
STORAGE	Mix & untidy	Mix & untidy	Separated & upkeep	Separated & upkeep	Mix & untidy	Mix & untidy	Separated & upkeep
FURNITURE	Basic	Excessive	Adequate	Excessive	Excessive	Adequate	Adequate
CIRCULATION/ MOVEMENT	Very congested	Very congested	Congested	Congested	Congested	Sufficient	Sufficient
DAILY ACTIVITIES	Overlapping	Overlapping	Overlapping	Separating	Overlapping	Partially Overlapping	Separating
DEGREE OF PRIVACY	No privacy at all	No privacy at all	Minimum	Minimum	Minimum	Adequate	Adequate
STRATEGY TO COPE WITH CROWDING	Spend almost all the daily activities outside, except sleeping at night	Suheni: Arrange a relative degree of privacy. Mimin: Extend dwelling territory outside the house.	Arrange the space to provide basic space for furniture, access and daily activities	Arrange the space adaptable to accommodate activities for all members of multi-family	For economic purpose ignore the opportunity to free from crowding	Use the space sparingly for economic purpose and daily living	Finding the best way to avoid crowding by making the best use of the available dwelling space

CONCLUSION

The idea that crowding has serious consequences for the man appears to have fairly wide acceptance (Altman, 1975; Altman, 1978; Gifford, 2011; Wells, et al, 2007). However, in the case of crowding in the *kampung*, this research suggested that to resist the effect of crowding, *kampung* residents retained immeasurable, intangible variables that should be taken into account. Although crowding involved potential inconveniences, it was not necessarily salient to the perceptions of *kampung* inhabitants. The size of the dwelling space was inevitably inadequate for *kampung* occupants, yet as they had experience living under conditions with limited space, they modified their spatial standards to alleviate the sensation of crowding. Rather than considering crowding as a problem, *kampung* dwellers expressed the benefit of living in dense setting, as it offers each other social support and economic opportunity. This research confirmed Stokols' theory on crowding, that the particular form of one's response to crowding will be a function of the relative intensity of social and personal factors, and the degree to which they can be modified (Stokols, 1972). The findings confirmed that *kampung* inhabitants were comparable with the Chinese and Hispanics who have a greater level of tolerance for overcrowding than Anglo-Americans as a generalization. Many scholars believe that for "close contact" Asian societies, living in confined quarters were judged as being voluntary or at least tolerable (Gove and Hughes, 1983; Hall, 1966; Stokols, 1972).

Crowding in the *kampung* was not merely caused by the scarcity of space, but also inter-generational co-residence under the same roof. To adjust to the limited economic ability of families to set up new households, crowding is synonymous with multi-generational living in the *kampung*. Affordability issues were not the only reason for tolerance levels related to crowding. For the elderly and for those who needs assistance and a quick response from family members (such as in the case of injuries and other accidents), smaller spaces mean more eyes and ears are available. An obligation towards family members, personal preferences, the need for mutual support, or a combination of these factors appeared to be a strong factor in why crowding does not always negatively impact the well being of *kampung* dwellers.

The finding strengthens the need of innovative and alternative method to avoid isolation, simplification and superficial approach in developing the knowledge on housing affordability (Salama, 2007). While in fact the activity of designing contemporary domestic space mostly relies on western spatial assumptions, residents' method of appropriating and thinking about space could not be overlooked. Additionally, the affirmative reaction to the high density of an inhabitant's adaptation level raised the need for further research on residents' preferences in relation to *interiority*. Another path of inquiry is on the wealth of ideas beyond crowding, which here not yet been explored in this research. It is also important to link the findings to other variables of the outdoor space and spatial arrangement of the whole *kampung*, such as the close-knit social network in the *kampung* community and the physical layout that enhancing social cohesion among residents.

ACKNOWLEDGEMENTS

The author thanks to Sherly Listiyanti (junior architect) who helped to organize the survey, supervised surveyors and provided all figures in this paper, and Diane Wildsmith (Visiting Assistant Professor Universitas Indonesia) who assisted in editing the paper.

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