

# Space transformation in a low-income housing community in Danukusuman, Surakarta

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# Space transformation in a low-income housing community in Danukusuman, Surakarta

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## 1. Introduction

Families require housing as a primary human need (Doxiadis, 1968; Rapoport, 1968; Turner, 1976), but not all families can meet their housing needs, particularly low-income families. According to Wen and Goodman (2013), the housing price itself consists of several developmental costs, including, for example, costs associated with land acquisition, construction, marketing and developer profits. Land price certainly affects the housing price (Wen and Goodman, 2013). This limitation, combined with the lack of land availability, particularly in urban areas, has caused housing prices to gradually increase. Additionally, housing prices are affected by an imbalance between the demand for housing and the

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availability of housing (Alaghbari *et al.*, 2011). The movement of housing prices and the economic structure that determines salary changes are factors that dictate the affordability of houses (Li *et al.*, 2017). This condition becomes an obstacle for low-income communities, which have economic limitations. These limitations, combined with high housing prices, have caused many new low-income families to be unable to afford their own homes. Thus, they seek other places to live by residing with their parents, renting a house or living in illegal places that potentially create slums or squatter conditions.

Housing transformations that take the form of dwelling alterations among low-income households are a common phenomenon in cities in developing countries. These transformations are caused by several factors, namely changes in socioeconomic settings and a miscellany of family structure, composition and lifestyle of the residents, which cause the dwellings to change according to the needs and conditions of their inhabitants (Avogo *et al.*, 2017). This occurs in low-income communities, where families often have many children, causing one house to become occupied by several families simultaneously. The increase in the number of family members over time leads to the development of problems because of the lack of space in the home. Houses that were originally occupied by one family are now occupied by several families, so space has become limited and uncomfortable because of its being subdivided or narrowed. Furthermore, this condition can affect the sustainability of the families' lifestyle and livelihood, and thus affects quality of life. The size of a home is associated with a family's economic capabilities. Houses of good quality are built in accordance with standards, situated in a suitable environment and sustainable both currently and for future generations (Drury *et al.*, 2006).

This phenomenon also occurred in Kampung Kajen. Kampung Kajen in Danukusuman Urban Village is located in the centre of Surakarta, which has a very high population density. Most people who live there are native to the area, and several generations typically live in one house over time. One reason for this is economic limitations, as the individuals cannot afford to buy their own homes. Another reason is that houses in Kampung Kajen are in very strategic locations that make finding work easy and that are close to markets and other trading centres. Most of the residents in Kampung Kajen find work in the informal sector and only have a small income to meet their daily needs. Almost all of the houses in Kampung Kajen are legacies, occupied by at least the third generation of families. Very few families live in Kampung without other family members residing with them (Sunarti *et al.*, 2014).

Previous research on land limitation, the provision of housing for low-income communities and the sustainability of decent homes from generation to generation (Aduwo *et al.*, 2013; Alaghbari *et al.*, 2011; Avogo *et al.*, 2017; Mohit *et al.*, 2010) has been conducted. Meanwhile the research on transformation of slum areas (Sunarti, 2016; Sunarti *et al.*, 2018) also has been conducted, however the research on transformation in residential buildings that have been inhabited for generations, has not been studied by previous researchers.

Based on this gap, this research aims to examine the transformation of space within the houses of low-income homes in Kampung Kajen. The study is concerned with the transformation and arrangement of space and the function of space in houses inhabited by several families. In such cases, the same area of the house is used for several generations of the same growing family. This research was conducted in slum areas that were rejuvenated by a grant from the central government of Kemenpera (Ministry of Housing) in 2010. Two locations were chosen: RW IX and RW X (Rukun Warga/RW is the division of territory in Indonesia under Hamlet); these areas have the highest number of uninhabitable houses in the adjacent region.



**2. Method**

The method used in this study was a qualitative case study approach. The qualitative method is the inquiry process used to gain an understanding based on the clarity of methodological traditions that examine social and humanitarian issues (Creswell, 1998). The case used in this study was the slum areas that receive aid from the government’s rejuvenation program. This research will reconstruct and synthesise the information obtained through field observation and interviews with informants (Yin, 2009). This qualitative research used the themes and results of previous research as references for entering into the field.

Both primary and secondary data collection techniques were used. Secondary data were collected from the Danukusuman Urban Village Office, facilitators and the Surakarta Development Planning Agency. Primary data were gathered by observation and interviews with informants. Informants in this study were classified into three groups: residents, non-residents and government agencies. In this study, informants known as “residents” referred to people living in the Danukusuman area and homeowners affected by the government’s rejuvenation program. Informants known as “non-residents” did not live in the area, but they were stakeholders who had a role when the Danukusuman rejuvenation program was implemented and in this case, included facilitators and individuals from community empowerment institutions. Informants known as “government agencies” referred to the stakeholders who previously represented the government in running the rejuvenation program and, in this case, included the Village Head, Former Village Head and Development Planning Agency. Interviews were conducted to gather information about the history of the families, the process of the development of the area and the shape of the homes occupied by children, grandchildren and even great grandchildren.

The sampling technique used snowball sampling, which meant the informants were determined in advance in accordance with the research objectives. The number of informants was not limited, and the researcher stopped the interview when the answer given was very similar among the informants. The key individual in this research was the Chief of *Rukun Warga* (*Rukun Warga/RW* is the division of territory in Indonesia under Hamlet). The Chief of RW revealed informants who had received housing improvement program benefits from the government. The researcher then visited the informant who was closest to the RW Chief’s house. This proceeded until the data was evenly distributed and able to represent the two areas of RW.

Informants affected by the rejuvenation program in Kampung Kajen included as many as 200 people. Using the snowball sampling technique, the researcher capped the number of informants at 55, which allowed the research purpose to be fulfilled. Interview results were classified based on a particular theme (thematic) and were analysed using qualitative descriptive analysis to produce the transformation model according to the research objectives. Interview results were recorded and classified using the following code (Table I).

In checking data validity, the triangulation method was used, which compares data from field observation results with interview data or with other sources of information (Moleong, 2007). In this study, the interview results with the residents were crosschecked with interview data with non-resident stakeholders, interview data with stakeholder agencies, field survey data and secondary documents obtained from government agencies. The

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I/R/D/HN	Interview/Resident/House Lot Number
I/NR/D/S	Interview/Non-Resident/Stakeholder
I/A/D/P	Interview/Agency/Informant Position during rejuvenation program in Danukusuman

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**Table I.**  
Informant coding

technique used to analyse the data was descriptive and qualitative, with primary and secondary data both described and given meaning according to what was obtained in the field and then linked to theories in accordance with the purpose of the research.

### 3. Literature review

#### 3.1 Transformations in the context of housing

“Transformation” is a scientific term that has been introduced in the social sciences and humanities; it refers to change in shape and detail, including both physical and non-physical changes (shape, form, nature and so on). In the social sciences, transformation gives the sense of a comprehensive change in form, appearance, nature, character and so on in a reciprocal relationship for both individuals and groups (Moedzakir, 1998).

Transformation includes creation and is the change from one form to another form that is entirely new in function or structure. To change is to create something new that has never existed before and cannot be predicted by the past. Transformation is a “change” in mindset (Mezirow and Marsick, 1978; Daszko and Sheinberg, 2005). Putiatine (2009) declared that transformation is a fundamental change from a state and requires a shift in culture, behaviour and mind-set. In other words, transformation requires a shift in human consciousness that truly changes lives and livelihoods. Transformation is not simply a change; rather, it has a more rational, cognitive and holistic perspective and can even be spiritually oriented.

Popkin *et al.* (2012) also describe how the transformation of housing includes certain activities, ranging from the internal arrangement of furniture and painting of rooms to structural amendments, such as the addition of more rooms or the demolition a house. In the context of housing, transformation can be considered a change in the house’s original form and spatial configuration to meet the current and future needs of the occupants. This transformation can occur because of residents feeling pressured by the fact that the inhabited dwelling is not large enough. To create better occupancy, space changes are made to increase the space and meet the need for increased space. The transformation is therefore based on improving existing conditions.

In this context, housing transformation can be considered a change from the original form and spatial configuration of the occupants’ residential units to meet current needs and expectations (Aduwo *et al.*, 2013). This seems consistent with the proposition (Mohit *et al.*, 2010) that improvement of housing conditions through transformation provides households the opportunity to create residential neighbourhoods in line with their needs, expectations and aspirations. Thus, the theory of housing adjustments provides insight into the transformation of housing and has a strong link with housing satisfaction.

Transformation has two forms: partial and integral. Partial transformation is a change in some physical elements and is followed by behavioural changes but is not followed by changes in mindset, culture or norms. Integral transformation is a comprehensive change that includes modifications in mind-set, behaviour and actions (Sunarti, 2016; Sunarti *et al.*, 2018).

#### 3.2 House and functions linkage

For the definitions of “house” and “dwelling”, according to Oliver (2003) as cited by Coolen (2009), 90 per cent of dwellings around the world are not single-family homes but rather dwellings that are self-built and occupied by their owner or by members of the community. Not all dwellings can be characterised as houses, as a dwelling can also be a shack or tent. Moreover, according to Rapoport (1980) as cited by Coolen (2009), the term “stay” is used to describe all physical structures lived in by people. Rapoport also defines a “dwelling” as a



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setting for certain activities within a system. A place of residence exists within a larger system of the environment, and for many individuals, it provides basic functions as a place to live and have shelter.

Hooimeijer (2007) as cited in Coolen (2009) distinguished four categories of dwelling function. The first function of a residential dwelling is to act as a treatment centre to maintain personal care, such as hygiene, eating and sleeping while also providing shelter, security and privacy. The second function is at the centre of activities such as reading, listening to music, watching television and entertaining family and guests. The third function is to provide a place to stay as the central point in the organisation of everyday life. The fourth is to provide the location for activities that will be carried out later. Based on Hooimeijer's description, a residence is not only used to carry out activities but also fulfils socio-psychological functions, such as security and privacy.

Although Rapoport (1968) distinguished between real activity and the latent function of a residence, such as privacy and security, this function is not included in his definition of a residence. A residence/dwelling is a permanent place from which one can explore the outside world and that one can return to following outside activities. A residence/dwelling is a sub-system of an enabling environment from which to understand the specific function of the environment itself. The definition of "occupancy" includes more than just activities and also encompasses the performance and experience of a person.

### 3.3 Spatial planning in the house

When constructing their houses, most people choose materials that will make for an easy life orientation from a maintenance point of view, while also attempting to maintain low cost. Additionally, everyone will choose to live in a healthy environment if possible (Bako and Jusan, 2012). However, a difference can be found between middle-lower society and middle-upper society. The arrangement of a room in a less wealthy person's house is different from that of an individual who has a higher income. Upper-middle income people already consider notions about separate spaces for various activities and the increase in space in accordance with the requirements of climatic conditions and the natural, technological and social environment. According to Drury *et al.* (2006), no method exists to predict the duration of occupancy by household or occupants over the life of the building they live in. The occupancy rate may be lower or higher than planned, and thus the shelter should be planned for with regard to the development level of occupancy. Some points to consider in planning for residential buildings regarding the duration of residence is whether it will be a permanent place to stay or a temporary one. Additionally, residences should be designed so that they are suitable for inhabitants who spend large amounts of time in the dwelling (Drury *et al.*, 2006).

According to Mason (2004), the evolution of the house from century to century has experienced different developments. Many factors exist that can change the house; when a room in the house has changed, family time and social relationships that have previously been formed can also be affected. Over time, the house can change its size, shape, technology and location, forming very different opportunities for family and individual privacy. A decrease in the number of families living in the house and improvement in living standards have been the main focus of the changing form of housing, and both factors have profound implications for housing and family life (Mason, 2004).

For centuries, the bedroom has not been used simply for its bed but is also a space to put a drinks table, chairs and other household items. Equipment or furniture is also sometimes used for certain events, such as births and deaths. Moreover, the bedroom can be equipped

with a clothes washer, storage for clothes and cots. In other words, a bedroom is multi-functional.

Housing consists of houses and infrastructure facilities, which sometimes undergo a great deal of changes, while at other times, no change occurs. To forecast what will happen with housing in the future is challenging because of uncertainties about how technology, culture and social relations will develop. Changing the home depends on how it is used.

#### 4. Results and discussion

##### 4.1 Description of *kampung Kajen Danukusuman*

Kampung Kajen, Danukusuman Urban Village in Serengan, Surakarta, is located in the city centre; its main function is as a residential area adjacent to the trade centre. It has easy accessibility from these settlement locations to downtown and other areas, which are supported by twenty-four-hour transportation.

According to the Urban Village office, Danukusuman consists of 15 RW and 61 RT (*Rukun Tetangga/RT* is the division of territory in Indonesia under the *Rukun Warga/RW*). At the end of January 2014, the population was roughly 10,262 people, consisting of 4,991 men and 5,261 women. The number of households in this village was 3,045. Environmental conditions in the village settlement of Danukusuman have economic characteristics that vary from poverty to wealth. Kampung Kajen, which is in the village that is the location of this research, consists of 2 RW, namely RW IX and RW X. The majority of the population has a low income, and environmental conditions are unsuitable for habitation. The total population in both RWs at the end of January 2014 included as many as 907 people (713 men and 742 women), and the number of households was 443. Not all families had their own house, as some houses were occupied by two or more families.

The number of houses in Kampung Kajen in 2014 was 256, consisting of 56 liveable and 200 unliveable housing units. The 200 uninhabitable housing units are located adjacent to one another, and they are attached. In 2010, the government of the Surakarta, using funding from the Ministry of Housing, managed to rejuvenate the Kampung Kajen Danukusuman Urban Village.

##### 4.2 Developments of land ownership status/Building

A house always evolves over time, but in the long term, this evolution cannot be predicted because the way in which a family grows is unpredictable (Drury *et al.*, 2006). Most families have a growing number of family members, and the various generations need shelter. For this reason, home ownership is very important for a family to be able to live peacefully in a house that is legally owned and to maintain their livelihood.

The main objective in the establishment of these houses is shelter and rest after working all day. Eventually, after families have settled on the site with their family members, the function of the residence is to house their growing families (Coolen, 2009; Indrawati, 2011). Kampung Kajen was initially a group of tenure houses occupied by people who cultivated the land owned by a palace; the residents only had the right to use or ride on the land owned by the palace and could not own it. However, over time, illegally constructed makeshift houses were built on these hereditary lands using bamboo or plywood materials. At first, the community's purpose in constructing the buildings was only for shelter on the land belonging to the palace. With the passage of time, the successors of the houses were fortunate enough to legally inherit their homes, as government policies legalised the land after the palace handed the land over to the government. This is also in accordance with the informant statement from the Development Planning Agency of Surakarta:



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The previous land status in Danukusuman is partly owned by the palace, owned by the government and owned by the people. For land whose status is owned by the government and the palace in 2009 has been ratified to become the Freehold Title with certificate bleaching program from BTN (*Bank Tabungan Negara*) [ . . ] – Gunawan, Section Chief of Physical and Infrastructure Planning Section in Development Planning Agency (I/A/D/Development Planning Agency).

Under limited economic conditions, multiple generations can remain in a house once occupied by their ancestors. Many are not able to buy a house, and the offspring of the new family remain in the house. As tenants, they may be worried about being evicted. In 1998, as the palace's land was submitted to the government, the residents were provided the opportunity by the government to establish their land status with the National Land Agency based on determined requirements. They now have home ownership. However, a few families' land/building status is still in the Building Rights Title because they were late to handle the land/building status with the National Land Agency, and now they lack the funds to change the status into the Freehold Title. This is in accordance with the statement of the former Village Chief of Danukusuman and Chief of *Rukun Warga*:

Once Kampong Kajen is the most slum village in Surakarta. State land, now everything is certified, there is a Freehold Title and Building Right Title, the land with the status of Building Right Title, because of they were late in submission, their own fault. – Sutiyo, Former Village Chief of Danukusuman (I/NR/D/Former Village Chief)

Previously all the land of Danukusuman was belonging to the Keraton (Palace), in 1971 was taken over by the state and the state gave the rule to the people that who have lived more than 5 years can certificate their land. Chief of *Rukun Warga* and Chief of *Rukun Tetangga* form the committee to take care of the land certificate to become Freehold Title. – Banoeri, current RW Chief in Danukusuman (I/R/D/K067)

The transformation of land ownership and the creation of buildings is highly desirable for families because they wish to legally own places of residence. By the third generation, the ownership status of the land and buildings becomes fragmented as it has been handed down to children or grandchildren. However, the message from the ancestors who occupied the house is "uri-uri" (conserve), which means that the house should not be sold. This is a reality that remains, although some spaces are being sold because of economic need.

#### *4.3 Transformation of the spatial distribution within the house in the kampong Kajen, Danukusuman urban village*

In this research, transformation is the physical change of a house building, followed by the behavioural change of the occupants. The physical change of a house is an alteration in the extent of space used for each family in one house from generation to generation. The change in the behaviour of the occupants occurs after changes that occur because of the results of the environmental rejuvenation program of the government. In Kampong Kajen, ideally, a family lives in one house (one family in one house) in a habitable area, but for a new family with limited economic funds, buying a house is very difficult. A new family in Kampong Kajen is usually unable to buy a new house independently, and from generation to generation, they still have their parent's house, which is the legacy of previous generations. Roughly 100 years ago, houses were first built and inhabited by a single family, but with the passage of time, the house becomes occupied by more than one household. A house initially occupied by a single family is now inhabited by a third generation of descendants, in-laws and grandchildren. This is in accordance with the following informant statement:



We lived here from generation to generation from our grandfather and grandmother, my father bought this house in 1960. He has 6 children, I am the 4th child. The one who occupies the father's house is me and my brother (5th child) and he is married. We each have a different family card. My father has died, he died here too. – Widodo, 45 years old (I/R/D/K136)

The building area of the house inhabited by the first generation was then transformed by the descendants by narrowing the space in the house because of the growing number of new family members. Eventually, the house was fragmented or divided between the offspring, meaning that large spaces in the house became small and cramped, which is expressed by the informant as follows:

This house is inherited from grandparents, there are 2 brothers ordered from grandma that this house should not be left, the house is for children and grandchildren. The house is in a plot to share with the children. The heritage of grandparents is likened to birds in a cage. Don't let it loose into the hands of others. Houses to be together, for hereditary, should be *uri-uri*. – Sugiyo (I/R/D/K107)

Space transformation is a change in the layout of the rooms, function of space and spatial orientation. The division of space for one generation changes because it becomes a division of space for several families. This is in accordance with the following informant statement:

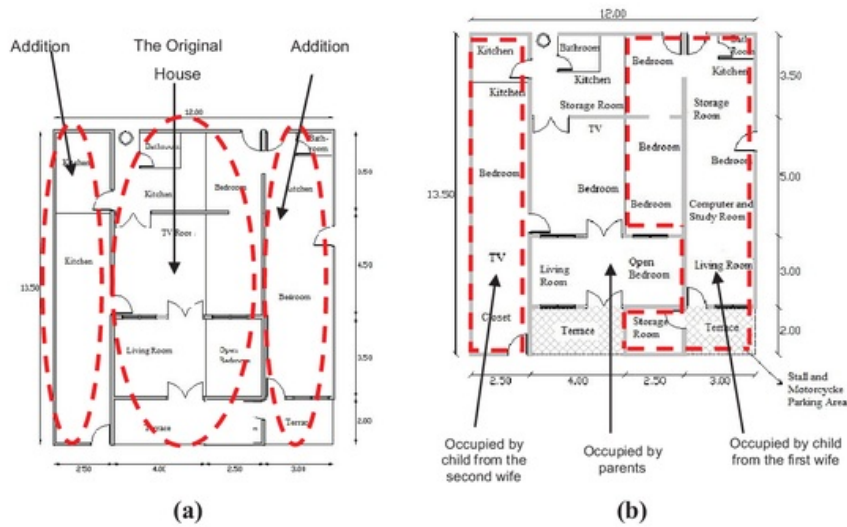
This house certificate is still on behalf of grandmother. In this house, there are 3 families. Grandmother still lives alone, then the number of my family members there are 4 people, 1 child, and 2 grandchildren who live with me. There was my son who had died a dozen years ago. My son was a total of 3 people but who lived with me one person, who is not married, one person. A number of 5 people, so the total number of family members there are 10 people. All sleep here. Part of the house has been divided that is for my grandmother and for me. – Arianti, 34 years old (I/R/D/K017)

As an illustration of the housing condition in Kampung Kajen, Danukusuman Urban Village, three samples of families' houses that represent the housing space transformation in Kampung Kajen were taken. The first example (Sugiyo's house) represents a large family that has a large home that is managed by the informant's own family. The second example (Prihatini's house) represents houses that are partially sold and partially maintained. The third example (Sumiyem's house) represents a large family living in a very small house and several other spaces that are for rent. The transformation of space in the three samples of houses can be seen in the picture below (Figures 1 to 3).

The samples taken from the three families above illustrate that the housing space transformation that has occurred in Kampung Kajen, Danukusuman Urban Village, did not change the house shape, but rather the division of space used for the next generation. The change in space is because of the growing number of family members living in the same house.

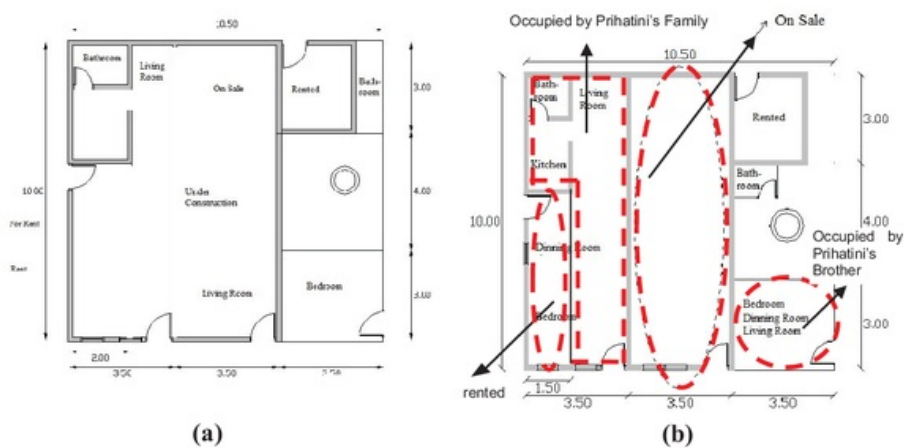
The division of space in the first generation indicates that little insulation or separation of existing space existed in the house, such that each activity was freely mixed in one room. In the next generation, the home changed slightly with the establishment of a divider to separate the sleeping area from spaces used for other activities. With the addition of third-generation family members, the room again changed with the division of the room for space distribution for married heirs.

Other transformations that occurred were changes in the function of space (Mason, 2004). Changes in the house interior were followed by changes in the function of space that was used by several families in one house. Almost all of the space in the house is now used for multiple functions, not only for one activity but also for all activities of life. For example, the family room is used for sleeping, dining, living, studying, etc. The transformed area of space in the house in all three examples above can be seen in Table II.



Notes: (a) Space division of generation II; (b) space division of generation III

Figure 1. (Example 1) Space transformation division in Sugiyono's house (Site 106-107)

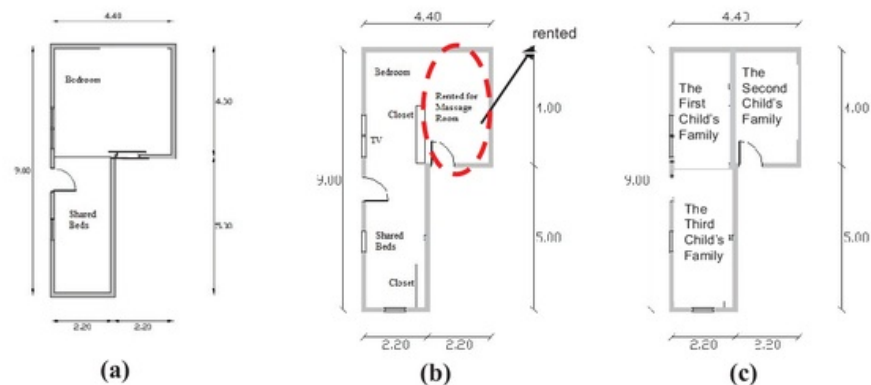


Notes: (a) Space division of generation II; (b) space division of generation III

Figure 2. (Example 2) Space transformation division in Mrs Prihatini's house (Site 036)

Most families show that the space division and size for future generations was adjusted according to the division of inheritance from the parents. The space size received by the next generation was smaller than that of the parents. The tables above are three samples from homes passed to offspring from generation to generation and represent the majority of houses in Kampong Kajen. As can be seen from the table, many changes and problems have occurred in these homes. Homes today are generally still in the name of the second generation of residents, even though they have passed away. According to the Indonesian National Standard (SNI), a person needs a housing unit of  $9m^2$ , but in the table above, the





**Figure 3.**  
(Example 3) space  
transformation  
division in Mrs  
Sumiyem's house  
(Site 017)

**Notes:** (a) Space division of generation I; (b) space division of generation II;  
(c) space division of generation III

average space available for one person in the house is generally below this standard. Each person living in a house in which size does not conform to standards can become emotionally unstable because each member of the family does not have a private room.

According to [Popkin et al. \(2012\)](#), the transformation of housing includes the activities of furniture arrangement, additions and the dismantling of the house's original form. In this study, the changes that occur do not change the shape of the house overall, only some parts of particular spaces. Changes in space only meant the provision of partitions and furniture to separate between space functions. In contrast to the [Popkin et al. \(2012\)](#) opinion, in this study, no change in the total building renovation occurred because of limited existing space and economic limitations. Thus, the transformation that occurred in these samples of Kampung Kajen was only partial.

Some space changes that occurred from the first generation to the third generation were done by the homeowners themselves, independently, without waiting for the assistance of any party. The rejuvenation program of the government in 2010 in Kampung Kajen was only intended to improve the quality of degraded housing. For example, walls that were made of brick became plaster, the plaster floor became ceramic and the roofs or leaking ceilings were replaced or patched.

The transformation that occurred as a result of the rejuvenation program has been studied in previous research ([Sunarti, 2016](#); [Sunarti et al., 2018](#)), but in this study, the transformation that occurred was one of space in the house by the residents themselves because of the growing family development and family members living in the same house.

#### 4.4 Transformation behaviour of the occupants

In this case, the transformation occurred not only through changes in the layout and distribution of functional indoor space but also through changes in behaviour and mind-sets ([Daszko and Sheinberg, 2005](#); [Poutiatine, 2009](#)). The behavioural changes occurred mainly in the second generation. Initially, they occupied the house only with parents and siblings, but currently, they do so with in-laws and nieces. They have had to adapt to living together in a house with other people who have become members of a new family, who need to share and who have mutual tolerance and respect. Living in a house with several family members is not

No.	Description	Generation I	Generation II	Generation III	Problem
1	No Site/ ownership		107 and 106 House certificate in the name of: Sugiyono (Example 1)		
2	Size	177 m <sup>2</sup>	The size is 177 m <sup>2</sup> , but it is divided into two parts by bordering the centre room with a non-permanent wall	The house space reduced to 144 m <sup>2</sup> for the roadside section (front and side), which was affected by road widening, and the house is divided into three parts for the children Building used right	The certificate is still in the name of the parent (the second generation: Mr Sugiyono)
3	Legality	Tenant	Tenant		Late submission of process property rights because of collective and now stopped because the fund was bought by someone who was appointed as a collector, and he is now dead The child of the first wife, as one child recently married, and there are three more unmarried siblings, but they live together with their first brother
4	Number of families	One family: first occupant (parent and two children)	Two families: one family is the parent, and another family is their children, with four grandchildren	Five families consisting of one parent family with his second wife	
5	Number of family members	Four people	Eight people	Right room: ten people Main room and left room: there are seven children from the second wife and several grandchildren The house is divided into three parts, right side and left the house to shelter their children	The number of family members increases as new families are formed and children join their husbands or wives The centre of the room for his parents, the right and left space for his children and his children-in-law and the room on the right side is for more people
6	Room division	Terrace, guest room, living room, kitchen and well	Building repair for the first wife and the children	Children from the first wife were given a room to the right, sealed with plywood, and children from the second wife were given a room to the left, which is still connected to the main house	Certificates are still held on behalf of the father, and there are still problems with inheritance between the children of the first and second wives
7	Problem	In total, he has 11 children, but some died when they were young, and now he only has two children	Only one child inherited the house, and he had seven children with his first wife and seven children with his second		

(continued)

**Table II.**  
Housing transformation from the first generation to the third generation  
Kampong Kajen, Danukusuman sub-district Surakarta



Table II.

No.	Description	Generation I	Generation II	Generation III	Problem
1	House number		35 – House certificate in the name of: Prihatini (Example 2)		
2	House size	105 m <sup>2</sup>	105 m <sup>2</sup>	105 m <sup>2</sup> /3 people = 35 m <sup>2</sup>	
3	Legality	(Magersari is using the land belonging to Keraton/the palace)	(Magersari is using the land belonging to Keraton/the palace)	Tenure	Still in the certification process because now most of the house is sold
4	Number of families	One family	One family	Two families	There are an additional two families: one who bought some parts of the home and one who rent the space partitioned by plywood
5	Number of family members	Six people	Three people	Four people	The family members have decreased because the first generation has its own house
6	Room division	Guest room, living room and lavatory	Guest room, living room and lavatory	Space is divided into three areas: the first room to be occupied and rented, the middle (front to back) is sold – the edge of the well is for the older cousin – and the rear is contracted	Inheritance to his children and grandchildren is problematic because each member of the second generation demands to be given some inheritance, even if they are not staying in the house
7	The process of ownership or residential homes that are shared or occupied heirs	First generation has three children and occupied 105 m <sup>2</sup> of the building size	The other brothers left Danukusuman, so only the third child lived there, and he had one child	Prihatini's daughter (Tantri) occupied a house given to her by her mother	Heritage home was sold and then divided among the second generation of children

(continued)

No.	Description	Generation I	Generation II	Generation III	Problem
1	House number/owner		17 House certificate in the name of: Sumiyem Rono Sudarmo (Example 3)		
2	House size	28.6 m <sup>2</sup>		Tenure	The certificate is still in the name of a parent who passed away
3	Legality	(Magersari is using the land belonging to Keraton/the palace)	(Magersari is using the land belonging to Keraton/the palace)		
4	Number of families	One family	Two families	Three families	1 Family card for all family members, however there is never a problem among them
5	Number of family members	Seven people	Eight people	11 people	By the second generation, the parents had divided the inheritance among the children, and they were given a house in front of the house now occupied
6	Room division	Only one room	Some space is divided to be rented	The room is divided into three rooms	After his parents died, the narrow space was divided among heirs but was uninhabitable
7	The process of ownership or residential house that is divided or assigned to heirs	28.6 m <sup>2</sup> is used by one family with six children	House area: 19.8 m <sup>2</sup> occupied by two children (2 family card) with five grandchildren, and most of the room, which is 8.8 m <sup>2</sup> , is leased	Each room is occupied by one family	Room division was set up after the parent passed away
				One family: three people (the second child) One family: five people (the third child) One family: three people (occupied by the first wife's child)	

Table II.



easy, but the parents' message is to live with "tepo sliro" (respect for each other), and the philosophy of Javanese people in one family is "mangan rak mangan asal kumpul" (be together both in happiness and sadness). With this message and philosophy, although there are issues yet to be resolved, they respect one another. This is in accordance with the statement of the Headman of *LPMK* (Village Community Empowerment Institution in Danukusuman):

[...] prosperity is relative. I am happy, I am 49 years after marriage, and have no problem. With the wife has a difference of 2 years old [...] The philosophy of the house is to maintain mutual harmony and emotion. The important thing or the foundation is mutual trust. If the trust is already shaken it will mess with anyone [...]. Ikhwan Dardiri, 75 years old, Headman of *LPMK* (I/NR/D/Headman of *LPMK*)

This demonstrates that the transformation that occurred in Kampung Kajen Danukusuman was not only from the division of space but was followed by changes in the mind-sets and behaviours of the inhabitants. Changes in layout, space and home ownership eventually led to a change in mind-set to live tolerantly with family and the environment.

#### *4.5 Transformation form and its influence on occupants' living*

Based on the results of extensive research, the houses in Kampong Kajen, Danukusuman Urban Village, Surakarta, have been divided into several parts. The divisions were made according to the number of family members who were kin. One house that had been divided was inhabited by several families whose offspring were related. In one house, no division of space existed according to function, and only a limited room existed, or one blocked by furniture. The majority of houses in Kampong Kajen are becoming smaller and narrower as a result of inheritance from generation to generation.

The transformation that occurred was from changes in the physical form of space and occupant behaviours, but the change did not occur as a whole (comprehensive) and was only partial. The shape of the transformation was caused by the influence of economic conditions and education of the inhabitants and their descendant generations. The transformation of space in these houses was caused by the very low economic conditions of residents in Kampong Kajen, which mean they cannot afford to buy their own homes. They occupy their ancestral homes with their new families. Furthermore, if their economic conditions do not improve, speculation can be made that the next generation will have very small houses. Transformation into a bigger space can only be achieved by building vertically, but with limited funds, this is not possible. To make the transformation better in the longer term, the next generation must have a higher education level because they will be able to improve their economic status. For example, with families whose children are in college (to become doctors), the families are more likely to leave the houses. With this economic capability, they can buy their own homes outside Kampong Kajen. The transformation that has occurred is a partial transformation that always changes the space in the same house from generation to generation. The extent of space inhabited by new families in the next generation narrows, which can lead them to live in an unfeasible house.

#### **5. Conclusion**

Transformation is the physical change of the house and is accompanied by changes in mindset, behaviour and actions (Moedzakir, 1998; Daszko and Sheinberg, 2005; Mezirow and Marsick, 1978; Poutiatine, 2009; Popkin *et al.*, 2012). The transformation of space within the houses in Kampong Kajen Danukusuman is partial transformations because the house changes are not thorough, and only renovation and additions are done to the structure of the house. This change is accompanied by changes in mind-set and behaviour towards

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tolerance for other families who live in one house. The transformation will continue to occur as the new family grows, and the area of space used by the new family will experience narrowing in future generations.

A lack of funds means the family lives in one narrow house along with their relatives, who are of different character. In this way, they must have a sense of tolerance and mutual respect. To improve their economy, the next generation must have a higher education level, and this will improve the local economy. Furthermore, the next generation could have a better future by having a house outside the village. Sustainability of thorough space transformation in the houses will occur if there is an increase in education and improvement in the economy of communities, which will improve the quality of life.

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