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# Quality of life for livable mixed use living

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**Abstract.** One of the typologies of mixed-use urban buildings is the shophouse. This kind of structure has long been one of the favorite dwellings of urban society. No wonder that development keeps continuing until today. Several previous studies indicate that shop house design is not always suitable for some livability criteria, such as the lack of open space, spatial, thermal, and audial comfort. Due to this 'weakness', this paper intends to explore aspects of quality of life in shop houses through literature studies. This study analyses secondary sources, namely scientific writings from academic journals and books. This exploration concludes that it is essential to focus the analysis on a subjective view of the quality of life-related to buildings' quality. The relationship between the built environment and quality of life-based on residents' living experience becomes the study's framework. The review recommends phenomenology as the approach to investigate the correlation. This study is vital for architects to design more livable buildings from the viewpoint of building occupants so that the design is more acceptable and beneficial.

## 1. Introduction

The livable home design aims to meet occupants' changing needs across their lifetime [1]. Livability refers to all factors that can improve life quality, both from physical, economic, and socio-cultural aspects [2]. Maintaining and improving the quality of life is the final achievement of building planning and designing. The quality of life varies from person to person in various places, depending on cultural backgrounds, experiences, and traditions. The quality of life, among others, relates to the built environment in which life takes place [3]. The built environment in which modern humans live today manifests in various typologies. One of them is a mixed building typology, in which residential and business activities are located in one building. This building type is increasingly found in urban areas due to expensive land and complicated transportation. Urban structures that combine commercial and residential uses have been found throughout history in cities worldwide, such as China's shophouses and apartment buildings with shops on their ground floors in Europe and America. In the English terraced houses, the front room has been converted or extended into a shop [4].

In Indonesia, we find at least two main types of mixed-function: tall buildings and low-rise buildings. The most mixed-function high-rise buildings are apartments, which accommodate shopping centers and or offices in one building. This typology can be single towers in one area or groups of dense building masses in superblocks. Another typology is the shophouse, a type of row building with two to four stories. The latter type exists mostly in developing countries, including Indonesia. One of the reasons why the building becomes a favorite is the price. This building is more affordable than the high-rise



ones that require a more complex building system and makes construction and operations more expensive.

The problem is that the current type of shophouse is not always in line with the ideal design comfort criteria. The buildings still maintain a narrow shape that extends backward, ordering in rows, having limited width, but have no courtyard [5]. The absence of inner open space causes a lack of spatial comfort, natural ventilation, and lighting. However, the shop's occupants have been living in the building for years. Nevertheless, it is minimal studies about the residents' viewpoint. Previous investigations about quality of life and built environment focus on residents' perception of housing design and facilities [6]. Many other studies stress the built environment for health-care function [7, 8]. It is hard to find the quality of life research of this mixed-use residential type, whereas this kind is one of the fastest-growing constructions in Indonesian cities. This fact raises questions: do the 'weaknesses' of the shophouses affect the residents' quality of life? So far, how is the concept of quality of life concerning building quality? What aspects should be considered in exploring the residents' quality of life? What is the most appropriate method to study this issue? The answers to these questions can provide a basic framework for investigating the quality of life of the people who live in it. Thus, this paper aims to:

- explore the concept of quality of life associated with building quality,
- explore the most appropriate approach to investigating the problem,
- formulate a framework for studying the dwellers' quality of life.

## 2. Methodology

This paper uses a literature search method derived from journal articles and other academic sources. The search was carried out on several journals article database portals, such as Proquest, the National Library of the Republic of Indonesia e-journals, and Google Scholar. The study's focus consists of three keywords: built environment, quality of life, and shophouses. From these three essential keywords, the search develops other entries, namely quality of life, subjective quality of life, subjective quality of life in developing countries, built environment and quality of life, housing and quality of life, shop houses, mix-used building, architecture and quality of life, and phenomenology.

Literature review for subjective quality of life, housing, and shophouses, then focus on journal articles with cases in developing countries, especially in Asia and Indonesia. The study of shop house issues is mostly from Southeast Asian countries, such as Indonesia, Malaysia, Singapore, and Thailand. Research on housing and quality of life on a building scale comes mostly from health journals. The study contains an investigation of the relationship between house quality and the quality of life of patients who require health care. Meanwhile, studies on shophouses are dominated by emphasizing heritage buildings' facades and spatial, thermal, and audial comfort. There are minimal studies highlighting residents' point of view, especially regarding perceptions of quality of life. The review reports that most investigation on the quality of life and housing in the health field use a phenomenological approach. Architecture studies have addressed this approach for the design process and quality study of the built environment. However, its use is still very limited in the built environment-quality of life relationship studies.

The literature review structures this paper into four subtitles to determine the theoretical framework about these issues, based on four keywords: shop house, quality of life, built environment and quality of life relationship, and phenomenology method. The discussion about shop house means to take a deeper understanding of the design characteristics and how far the research concerning this subject. Next analysis reviews quality of life concept, measurement, and indicator, to find out the most suitable view in exploring this aspect, based on the latest previous researches. Then, the criticism looks at the relationship between the built environment and quality of life to formulate a theoretical framework for exploring shop houses' residents' views about dwelling the place. The latest part discusses the phenomenology method as one of the suitable ways to study approach.

### 3. Shophouse as the most mixed-use living type in South East Asian Cities

The term shop house was first introduced in 1865 by Cameron, a British geographer, to classify housing in Singapore's colony. [9]. Shophouses, defined as 'houses built in a row separated from each other by a common party wall, with colonnaded verandah. This building has mixed uses of business activities on the ground floor and residence on the floor above' [10]. This typology spread out in Southeast Asian cities like Singapore, Penang, Kuala Lumpur, Melaka, Jakarta, Bangkok, Quanzhou, Chaozhou, Guangzhou, and Taiwan [11].

The characteristics of the shophouses are as follows [11,12]:

- consisting of one to three floors with the function of business activities on the first floor and a residence on the second floor and above;
- the arrangement of the floor plan function is intended for the convenience and safety of the store
- lining up on a block that is restricted to the main road (front), side lanes, and back roads
- being connected to a pedestrian that is protected from tropical weather
- forming a standard room with a front width between 4 to 5 meters and lengths to the rear varying from 15 to 25 meters or more.

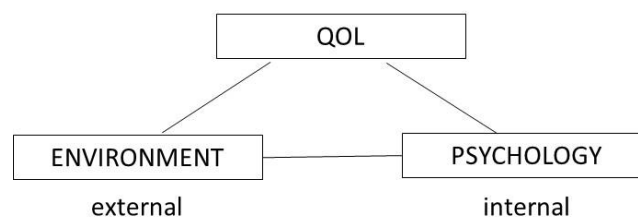
Shophouse, as a typical urban building typology, has various advantages and also problems. Previous studies show that a shophouse's strengths are flexibility, accessibility, pedestrian orientation, and unique architectural heritage facade design [13-20]. However, several problems are also noted, such as the lack of open space, spatial, thermal, and audial comfort [21-26] (Table 1).

**Table 1.** Shophouses issues from previous studies.

Author, year	Shophouse issue
Sugiharto, 2017 [13]; Elnokaly and Wong, 2014 [14]; Tirapas and Suzuki, 2013 [15]; Tirapas and Boonyachurt, 2013 [16]	Whole design
Kartamiharja, 2015 [17]	Form
Puspitasari and Handjayani, 2016 [18]; Eddy et al., 2020 [19]	Façade
Loebis, et al., 2019 [20]	Meaning
Sari, 2018 [21] ; Ginting et al, 2018 [22]	Spatial comfort
Zahrah, 2016 [23]; Aranha, 2013 [24]	Sustainable urban environment
Dang and Pitts, 2017 [25]; Zakaria et al., 2015 [26]	Thermal Comfort

### 4. Quality of life: concepts, indicators, measurements

Quality of life (QOL) is a complex and multivariable concept. Experts point out that there is no single standard for defining quality of life. Several different terms can refer to the notion of quality of life, such as quality of life, well-being, satisfaction, and happiness [27]. Quality refers to "the level of excellence of something" [3]. However, the concept of quality of life can vary from person to person. When one person defines the quality of life as happiness, another may refer to economic status, education, health, or security. Thus, the quality of life is related to describing and evaluating human life natures in a particular area [3]



**Figure 1.** The environment and psychology dimension of quality of life.

Various reviews about the quality of life resulted in the same conclusion that quality of life has two dimensions. The dimensions are psychological and environmental (Figure 1). The psychological side deals with internal psychiatric mechanisms, resulting in a feeling of satisfaction with life. In connection with this, several terms are used, such as subjective well-being, individual/personal quality of life, and life satisfaction. The environmental side relates to external conditions that affect internal mechanisms. These external conditions have several different levels and terms, such as quality of urban life, community quality of life, quality of place, and environment [28].

Concerning society and the urban environment, Marans and Stimson [29] cite the definition put forward by Mulligan et al. that "the quality of life is a satisfaction that a person gets from the physical and social conditions around him and can influence behavior, individually and in groups. " In line with the external and internal dimensions put forward by Massam [28], this definition reveals the relationship between humans and their surroundings as a mechanism for the formation of quality of life. The same thing was also expressed by Das [3], who argued that the quality of life is an interaction between humans and their objective environment.

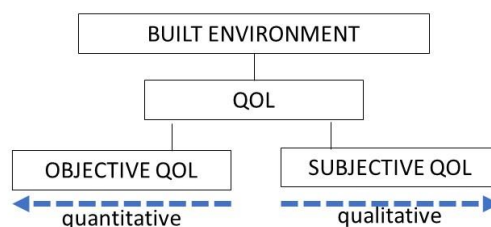


Figure 2. Objective and subjective QOL.

In the study of quality of life, there are two views: the objective quality of life and the second is the subjective quality of life (Figure 2) [30-32]. The objective quality of life offers the external conditions of life. The study refers to reports of factual conditions and behavior that are clearly visible. Objective indicators are measured based on frequency as an internal aspect of the individual. These factors are tangible factors, such as the physical, economic, or technical environment. However, social indicators are always used as objective measures of quality of life. For example, variables such as infant mortality rates, the number of doctors per capita, and life expectancy rates are used to estimate health. The murder rate, the number of police officers per capita, and the incidence rate of rape are the data that count the crime rate. However, these indicators are often imperfect due to under-reporting (e.g., crime rates) and over-reporting (e.g., income). Besides, the selection of variables for objective indicators may involve subjective decision making. Thus, the objective indicators do not always reflect people's real experience about their level of welfare. An individual's sense of well-being is a more complicated experience than just assumed numbers. Therefore, it is crucial to pay more attention to subjective evaluation from society's perspective [3].

The essential thing in subjective indicators is the context associated with their use. In parallel with attempts to use objective characteristics, subjective indicators have received much attention. The central premise is to understand well-being more deeply from an individual's point of view. Studies on subjective quality of life instead use the term satisfaction than happiness. The concept of satisfaction is considered a more defined concept and provides conditions for how cognitive judgments are experienced, while happiness reflects short-term emotional states [29]. In measuring the level of satisfaction, Campbel et al. [33] believe that a person's context and evaluators are critical in understanding life quality.

Quality of life is an interactive relationship between objects in the environment and a person's internal psychological processes. Thus, studies of the current quality of life are more likely to be measured from a subjective point of view by measuring a person's assessment of their living conditions. In terms of subjective quality of life indicators, various answers are obtained, as shown in Table 2.

**Table 2.** Several variables of people's subjective quality of life.

The happiest moment in Asia [34]	The Asian quality of life characteristic [34]	Indicators of the Neighborhood Subjective Quality of Life [29]	European Subjective Quality of Life Indicators [35]
Married	Good family relationship	Housing and	Access to material
Holiday	Economic Adequacy	neighborhood	resources
Birth of a child	Healthy	The desire to move	Social relationships and
Have good friends	Access to infrastructure	Perceptions of security	support
Good harvest	(transportation,	Perceptions of school	Perception of society
Good product price	electricity, agricultural	quality	Balance the use of time
Have a job	irrigation)	Perceptions of health	
Healthy	Good education	facilities	
Ramadan fasting	Independent	Feelings for neighbors	
Independence Day	Obeying religious orders	Feelings towards garbage	
	(Islam)	collection	
	Good house	A feeling of congestion	
	Own land	and tightness	
	Live peacefully with	Feelings for the	
	other people.	government	
		Satisfaction with health	
		Satisfaction with family,	
		friends, work	
		Life satisfaction, total	
		happiness	

Table 2 indicates that the scope of the quality of life variable is very broad. However, from these various variables, it can be said that the quality of life is related to satisfaction with the level of economy /welfare, family life, social relations, public service facilities (education, health, other infrastructure), and the level of religious obedience. The last aspect is one that distinguishes the subjective quality of life of Asians from Europeans. It relates to a transcendent connection with the creator and affects one's outlook on life [36].

## 5. Built environment and quality of life

The interaction between humans and the built environment occurs through continuous, direct contact, merging into one existential unit [37,38]. This interaction's end goal is creating a peaceful, satisfying, and liberating environment [37]. The interaction between humans and the built environment happens through the building's physical elements and the environment. Concerning Heidegger's purpose of dwelling, the built environment, and all its constituent parts aim to create a sense of peace and happiness for its residents. It means that the quality of life is well-maintained.

How the built environment relates to the quality of life has been the interest of many scholars. The study results most referenced are those of Campbell et al. [33], who examined Americans' quality of life. The framework created by Campbell et al. provides a concept of how environmental, physical attributes influence a person's level of satisfaction with his physical environment and contribute to the quality of life. This concept was also later developed by Marans and Stimons [29] in compiling ideas about the direction of research on the quality of urban life, as outlined in their book *Investigating Quality of Urban Life: Theory, Methods and Empirical Research*.

Mc Intyre [39] analyzed 198 documents in conducting a comprehensive study of how architecture and design impact human life in England and Scotland. He divides the impact into three categories, namely social, economic, and environmental. It presents how to design and architectural features at

various scales, from a single classroom to complex spaces in tall buildings, impact human life. He divides the effects into economic, social, and environmental. From various studies that link the built environment and quality of life, the built environment's quality is related to two categories of quality of life: the physical and non-physical quality of life. Physical quality of life is related to physical health and the environment (energy, air pollution, climate, biodiversity, etc.). Non-physical quality of life is related to social and psychological experience, such as social relationships, a sense of security, a sense of relaxation and calm, and the effects of stress recovery.

## 6. Phenomenology in exploring subjective quality of life

The term phenomenology was first used in 1765 in philosophy, including Kant's writings, but only by Hegel to be better defined. According to Hegel, phenomenology refers to knowledge as it appears in consciousness, the science that describes one's perceptions, feelings, knowledge, and natural awareness [40]. Phenomenological studies aim to explain the individuals' general meaning to their various life experiences. It relates to the concept of a phenomenon [38]. The primary purpose of phenomenology is to reduce individual experiences of phenomena to a description of the essence.

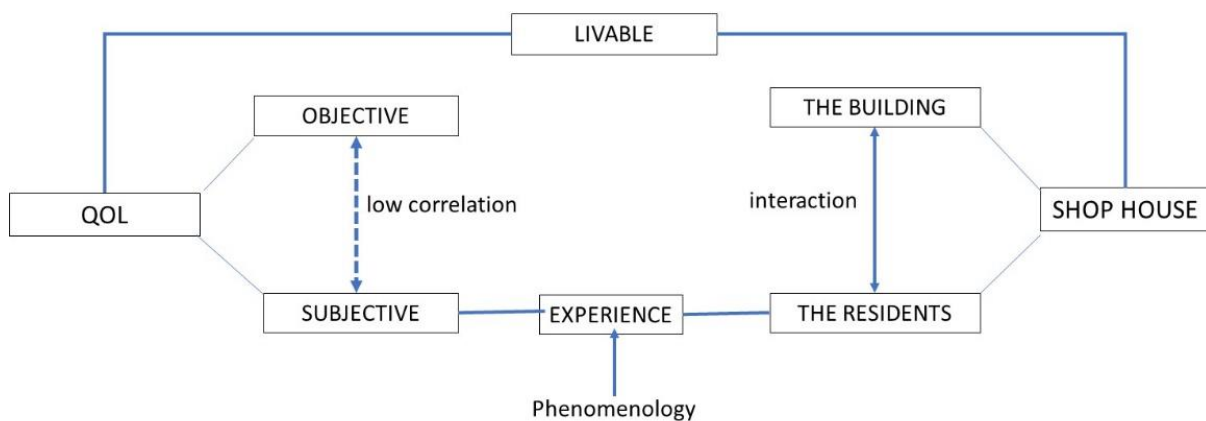
In summary, phenomenology is an interpretive study of human experience. The aim is to examine and clarify situations, events, meanings, and experiences "as they happen in real everyday life." Its goal is "a thorough description of human life as it lives and is reflected in all original clarity, urgency, and ambiguity" [41].

In architectural and built environment research, phenomenology is a method to unify difficult things between feelings and thoughts, between authentic experiences and secondary notes about those experiences. The focus is on everyday environmental experiences and real human situations in real places [41]. Phenomena refer to objects or experiences as a person experiences them. An object, event, condition, or experience that can be seen heard, touched, smelled, tasted, understood, known, understood, or passed through in life, can be a good topic in the phenomenological investigation. The primary purpose of the study of phenomenology is not a specific description of the phenomenon, but rather the use of that description to find the essential things that are the essence of the phenomenon. Phenomenology focuses on the specifics of phenomena, hoping that this will lead to general qualities and characteristics that accurately describe the essence of the nature of these phenomena, as experienced and interpreted in one's real life and experience.

According to Seamon [41], the study of phenomenology is based on two fundamental assumptions, namely: (1) humans and the environment are intimately bound in one "package"; and (2) humans and the environment are connected in "radical empiricism." Radical empiricism means that knowledge rises from the researcher's personal awareness and sensitivity rather than the usual secondary constructs as positive-science tradition (a priori, theories, concepts, hypotheses, and statistical measures of correlation). How the built environment relates to the quality of life is assessed through a perceptual process [37,42-44]. The quality of human life intrinsically occupies space. Any understanding of the quality of life must refer to what is someone's living goal in a place to maintain the quality of life, both individually and in groups. In summary, human life quality is closely related to the quality of place [40] (Figure 3).



**Figure 3.** Schematic of the relationship between the built environment and quality of life.



**Figure 4.** The framework of QOL and shop houses investigation.

## 7. Conclusion

This review formulates a framework for the quality of life and built environment relationship investigation, as shown in the scheme (Figure 4). The success of a livable house is the achievement of the residents' quality of life. This matter is not merely the quantitative result, such as economic or education, but more to a deeper understanding of what and how people perceive, feel, view, experience, and become part of their built environment. One of the best ways to explore this phenomenon is phenomenology.

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