

**THE IMPORTANCE OF PHYSICAL LINKAGE AND
CONNECTIVITY TO INTEGRATE THE KAMPUNG
AND FORMAL PARTS OF THE CITY
CASE STUDIES: HEGARMANAH AND CIUMBULEUIT
SUB-DISTRICTS, BANDUNG, INDONESIA**

RESEARCH THESIS



By:

**Claudia Montenegro Vieira Santos
8111801007**



Supervisor 1:

Dr. Yohanes Basuki Dwisusanto, Ir., M.Sc



Supervisor 2:

Dr. Yohanes Karyadi Kusliansjah, Ir., IAI.

**ARCHITECTURE MASTER STUDY PROGRAM
POSTGRADUATE SCHOOL – FACULTY OF ENGINEERING
PARAHYANGAN CATHOLIC UNIVERSITY
BANDUNG, FEBRUARY 2021**

ENDORSEMENT PAGE

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APPROVAL PAGE

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Supervisor 1:
Dr. Ir. Yohanes Basuki Dwisusanto, M.Sc.

Supervisor 2:
Dr. Ir. Yohanes Karyadi Kusliansjah, M.T., IAI.

Examiner 1:
Ir. Herman Wilianto, MSP, Ph.D.

Examiner 2:
Dr. Ir. Rumiati Rosaline Tobing, M.T.

**ARCHITECTURE MASTER STUDY PROGRAM
POSTGRADUATE SCHOOL – FACULTY OF ENGINEERING
PARAHYANGAN CATHOLIC UNIVERSITY
BANDUNG, FEBRUARY 2021**

STATEMENT PAGE

I, the undersigned, present my personal data as follows:

Name : **Claudia Montenegro Vieira Santos**
Student ID : **8111801007**
Study Program : **Master in Architecture**
Faculty of Engineering
Parahyangan Catholic University

and state that the Research Thesis Proposal with the title:

**THE IMPORTANCE OF PHYSICAL LINKAGE AND CONNECTIVITY
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is indeed my own work under the guidance of an Advisor, and I did not plagiarize or quote in ways that are not in accordance with scientific ethics prevailing in the scientific community.

If a violation of scientific ethics is found in my work, or if there are formal or informal demands from other parties related to the authenticity of my work, I am ready to bear all risks, consequences and/or sanctions imposed on me, including cancellation of an academic degree received from Parahyangan Catholic University.

Declared: in Bandung

Date: February, 2021

Claudia Montenegro Vieira Santos

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BANDUNG, INDONESIA**

Claudia Montenegro Vieira Santos
NPM: 8111801007

E-mail: vieiramontenegro@gmail.com

Supervisor 1: Dr. Yohanes Basuki Dwisusanto, Ir., M.Sc.
Supervisor 2: Dr. Yohanes Karyadi Kusliansjah, Ir., M.T. IAI

Bandung, 2021

ABSTRACT

This research intends to investigate the critical role of physical linkage and connectivity in the integration between formal and informal (kampung) urban areas of the city, how integration and segregation play a role or influence this coexistence and how space is experienced through physical connections, identifying the related aspects preventing the integration process. The objective is to understand this role in relation to viability of integration. The qualitative method is applied to describe the effectiveness of connectivity and linkage, and the complexity of interaction between formal and informal areas in the built-form and open space. This research includes two important sub-districts in Bandung, Indonesia, namely, Hegarmanah and Ciumbuleuit. Findings show Hegarmanah as enclosed with more incidence of controlled areas, through physical barriers, circulation restrictions. Ciumbuleuit presents less controlled areas, encouraging a wider use of public space, a variety of services, commerce and commuting. Interaction between pedestrians and built environment has experienced more adaptation, in a more open configuration. In conclusion, formal and informal (kampung) urban areas coexistence is jeopardized by isolation and the way linkage is established. Space configuration, borders, limited access through narrow roads, and other restrictions represent forms of control, obstruction to the integration process, impairing physical connectivity and encouraging spatial segregation. Integration can be stimulated when space is articulated and able to adapt. The coexistence of seemingly social and physically segregated formal and informal parts of the city can be comprehended when there is a correct interpretation of the role of physical linkage and connectivity through the analysis of space.

Keywords: integration, linkage, connectivity, formal, informal

FOREWORD

The investigations for the elaboration of this research have enlarged my comprehension in the field of architecture and urbanism and equipped me with new tools in the exploration of this science from a different angle and depth. Learning from varied academic sources has helped me to formulate problems and understand the issues and phenomena that affect our urban space. This journey is only at its first phase but much has been added, including a better understanding of important elements related to challenges in linkage and connectivity.

Although imperfections are a reality, I hope this Research Thesis will bring some comprehension and insight related to what will further be explored.


Therefore, the author would like to thank:

1. Dr.Ir. Yohanes Basuki Dwisusanto, M.Sc, as supervising lecturer through this journey, for his experience and inputs, balance to bring critique, sharing his expertise during assistance, as well as providing clear guidance.
2. Dr.Ir. Yohanes Karyadi Kusliansjah, M.T., IAI, head of Kaprodi, at Parahyangan Catholic University Master's Program in Architecture, for his supervision and for always providing meaningful inputs and research resources, support, direction, always encouraging learning and growth.
3. Ir. Herman Wilianto, MSP, Ph.D, and Dr. Ir. Rumiati Rosaline Tobing, M.T. as the examiner lecturers, for clear advice and good insights in the process.
4. The Administrative Staff of UNPAR, for their prompt, effective assistance in administrative matters related to this Research Thesis, as well as the support needed during the time I underwent Covid-19 in 2020.

I hope this Research Thesis will be a relevant tool to benefit others in this field, lay people and government departments for the improvement of issues related to linkage and connectivity in our urban space.

Once again, thank you for the rewarding adventure of learning in Indonesia.

Bandung, February, 2021

The Author


Claudia Montenegro Vieira Santos



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CHAPTER 1

INTRODUCTION

THE IMPORTANCE OF PHYSICAL LINKAGE AND CONNECTIVITY TO INTEGRATE THE KAMPUNG AND FORMAL PARTS OF THE CITY

1.1 Background

The issue of physical linkage and connectivity is not a new subject in the problematic of space but in order to better comprehend it, integration and segregation will be critical to clarify their occurrence in both physical and social aspects. The understanding of Segregation as an empirical phenomenon of exclusion and how it is present in the issue of integration is imperative.

Segregation may affect different social spheres in connecting and establishing linkage (Gehl 2011). It relates to quality of life as well as environmental and urban conditions that should be in harmony with the built environment. Spatially segregated areas are more vulnerable, and as hierarchy of space is perceived, it affects connectivity and integration due to fragmentation.

The lack of linkage and connectivity can promote segregation if separation and exclusion persist. Borders, gates in the urban kampungs, narrow paths, extreme proximity between small informal houses can also express whether lack of communication between the planned and the spontaneous reflects unequal living conditions and unordered growth. In the social sphere, the negative impact of unequal living conditions can be a major problem as it affects development and is usually felt deeply among the less privileged, where configuration of space encourages exclusion. Those will stand as issues related to spatial integration, in the attempt to comprehend the important role of physical linkage and connectivity.

The two types of city, planned and spontaneous, often exist side by side (Kostof 1991), thus, it's important to identify where people function together, and where groups diverge by consenting in separation of functions.

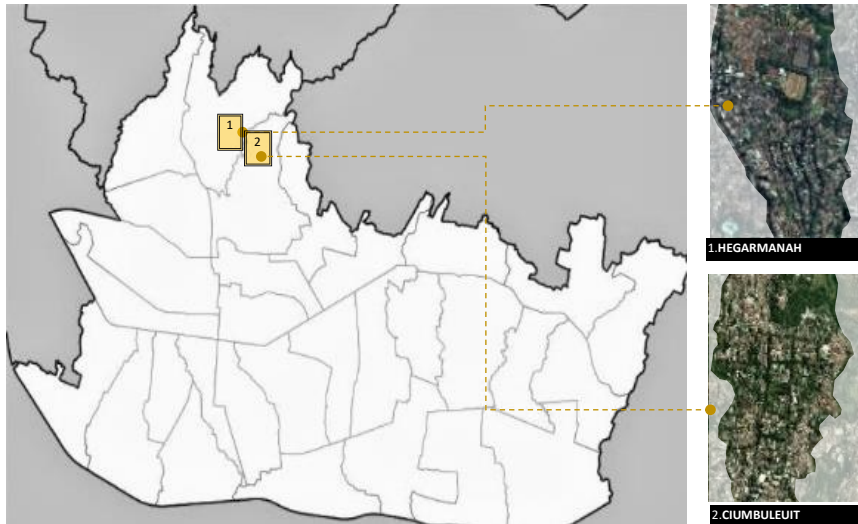


Figure 1 Map of Bandung
Source: Mandamaruta, 2017

Figure 1a Areas analysed
Source: Si Petruk, 2018

The areas chosen for analysis as shown in figure 1, Hegarmanah and Ciumbuleuit, are located in the north part of Bandung, and represent an important and traditional part of the city. They present challenges in common regarding spatial configuration, accessibility and connectivity for pedestrians and vehicles. The dynamics in the relationship between built-form, open spaces and the human presence is affected by borders, boundaries and contours. Borders can influence how paths, streets and other structural elements in the city manifest and their role will be an important aspect to consider in this problematic. They relate to territory, be it geographical or political, and they represent restriction, control, or a delimitation of space. As communication in physical boundaries and borders happens through the dynamic between people and the built environment, it is related to linkage and connectivity and may experience disruption. Linkage and connectivity show that space and social life are connected (Hillier, H, J. 1984).

Configuration, as subjected to natural, physical, as well as social aspects, is crucial for an analysis between formal and spontaneous settlements. Physical linkage in the kampung will reveal if there is integration to the city and represents a key aspect in the livability of such areas and their relation to the city.

1.2 Phenomena

1.2.1 Empirical Phenomenon - The indicator of physical segregation between formal and informal settlements through narrow and winding paths, strangled circulation and low connectivity.

1.2.2 Theoretical Phenomenon - The contrast or separation between formal and informal settlements, seen through the manifestation of exclusion and isolation, the lack of communication between the planned and unplanned housing and unordered growth in the unplanned areas. The hierarchy of roads identified in the separated areas and how space promotes distance instead of bringing a community together.

This lack of spatial integration is a phenomenon indicated by low connectivity and the existing borders and boundaries present in the open/public space in developing countries, including Bandung, Indonesia.

1.3 Issue

- i. How the lack of connectivity and physical linkage affects integration in informal urban spaces which, because of natural or man-made boundaries, are deprived of interaction with formal parts of the city, through physical and social segregation.
- ii. How neglected areas can be a reference to identify whether segregation is only caused by physical issues or social segregation can also be a hindrance to integration through low linkage and connectivity.

1.4 Problem Formulation and Research Question

1.4.1 Problem Formulation

- The lack of spatial integration between kampung areas and formal parts of the city that limits the quality of social life.
- How linkage and connectivity are affected by borders and boundaries, in the spatial configuration, through physical and social segregation.
- The role of connectivity and physical linkage as important elements in both integration or segregation between kampung people and those who live in formal housing.

1.4.2 Research Question

How important is the role of physical linkage and connectivity in integrating the kampung with the formal parts of the city?

Based on the main question above, other inquiries can be derived:

What are the factors of physical linkage/connectivity? What are the elements or factors that most influence the applicability of physical linkage and connectivity?

1.5 Objective and Benefits

1.5.1 Objective

This research intends to investigate how physical linkage and connectivity play a critical role in the integration between formal and informal areas of the city, as well as identify aspects related to physical and social segregation preventing this integration process.

1.5.2 Benefits

- A. There are benefits to the local community as new ways of encouraging connectivity and interaction are identified.
- B. There are environmental issues that can be identified and will require government participation to promote better life quality and policy changes.
- C. There are academically important benefits related to the understanding of how linkage and connectivity can influence integration or disintegration of two distinct segregated areas.

1.6 Scope of the Research

Identify why connectivity and linkage are important to the relationship between formal and kampung (informal) settlements, while identifying how segregation and integration stand as aspects that affect this dynamic and influence space in the sub-districts of Hegarmanah and Ciumbuleuit. The coexistence of seemingly social and physically segregated formal and informal parts of the city can be comprehended when there is a correct interpretation of the role of physical linkage and connectivity through the analysis of space.

1.7 Research Framework

In this section we describe the proposed framework to analyse informal settlements.

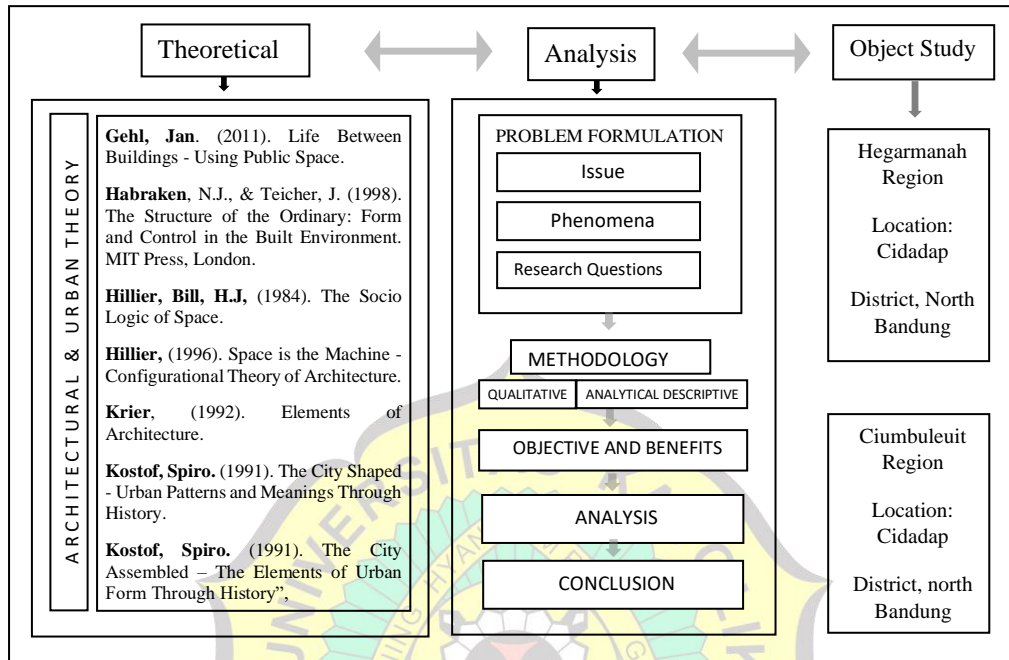


Figure 1.2 Research Framework